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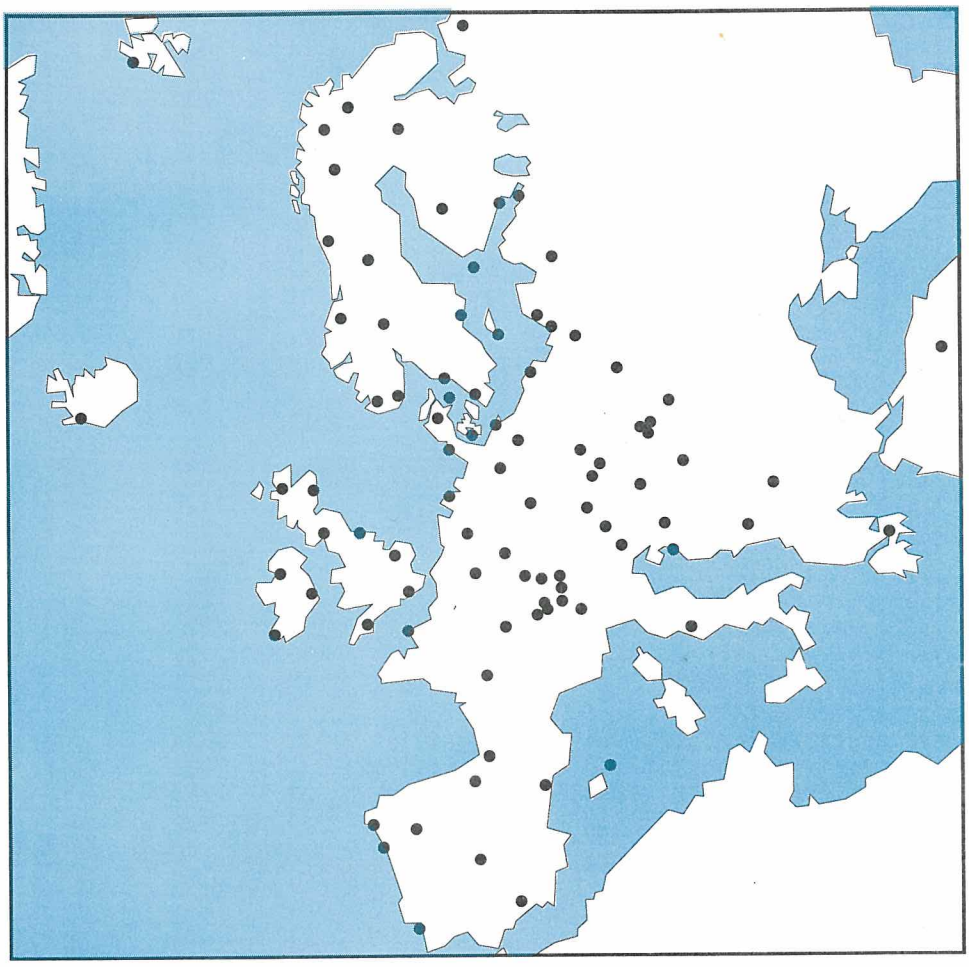
EMEP

CO-OPERATIVE PROGRAMME FOR MONITORING AND EVALUATION OF THE LONG RANGE TRANSMISSION OF AIR POLLUTANTS IN EUROPE

Data Report 1997

Part 1: Annual summaries

A.-G. Hjellbrekke



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1. Introduction

The preparatory phase of the "Co-operative programme for monitoring and evaluation of the long range transmission of air pollutants in Europe" (EMEP), started 1 October 1977. The first measurement phase was run from 1 January 1978 to 31 December 1980, and the second, third, fourth and fifth phases during the periods 1981–1983, 1984–1986, 1987–1989 and 1990-1994 respectively. 1997 was the third year in EMEP´s sixth measurement phase.

The EMEP data from 1997 for the main components in air and precipitation have been presented in two reports. Part 1, contained in this volume, gives the annual summaries. Part 2, contained in EMEP/CCC-Report 4/99, gives the seasonal and monthly summaries of the data from 1997.

In total, precipitation data from 81 stations and air data from 94 stations are presented in this report. The total number of measurement sites in this report is 99.

The air and precipitation samples were analysed at the laboratories in the participating countries and the results have been forwarded to the Chemical Co-ordinating Centre (CCC) at the Norwegian Institute for Air Research (NILU).

2. The measurement network

The location of the measurement sites which have delivered data during 1997 are given in Table 1 and Figure 1. In addition to the network presented here, there are additionally sites with ozone measurements.

In some parts of Europe, the site density is low and highly unsatisfactory. There is a need for more sites especially in the Mediterranean region and in the eastern parts of Europe.

Data have not been reported from Belgium since 1992. In Greece there are no sites with precipitation measurements and only one site with air measurements. Data from this site do not meet the criteria for data capture. There is also a need for more sites in Turkey, Italy and Cyprus.

Table 1: List of EMEP monitoring stations in operation in 1997.

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
Austria	AT2	A2	Illmitz	47°46'E	16°46'E	117
	AT4	A4	St. Koloman	47°39'N	13°12'E	851
	AT5	-	Vorhegg	46°40'N	12°58'E	1020
Czech Rep.	CS1	CS1	Svratouch	49°44'N	16°02'E	737
	CS3	CS3	Kosetice	49°35'N	15°05'E	633
Denmark	DK3	DK3	Tange	56°21'N	9°36'E	13
	DK5	DK5	Keldsnor	54°44'N	10°44'E	9
	DK8	DK8	Anholt	56°43'N	11°31'E	40
Estonia	EE9	SU9	Lahemaa	59°30'N	25°54'E	32
	EE11	SU11	Vilsandi	58°23'N	21°49'E	6
Finland	FI4	SF4	Ähtari	62°33'N	24°13'E	162
	FI9	SF9	Utö	59°47'N	21°23'E	7
	FI17	SF17	Virolahti II	60°31'N	27°41'E	4
	FI22	SF22	Oulanka	66°19'N	29°24'E	310
	FI37	-	Ähtari II	62°35'N	24°11'E	180
France	FR3	F3	La Crouzille	45°50'N	1°16'E	497
	FR5	F5	La Hague	49°37'N	1°50'W	133
	FR8	F8	Donon	48°30'N	7°08'E	775
	FR9	F9	Revin	49°54'N	4°38'E	390
	FR10	F10	Morvan	47°16'N	4°05'E	620
	FR11	F11	Bonnevaux	46°49'N	6°11'E	836
	FR12	F12	Iraty	43°02'N	1°05'W	1300
Germany	DE1	D1	Westerland	54°55'N	8°18'E	12
	DE2	D2	Langenbrügge	52°48'N	10°45'E	74
	DE3	D3	Schauinsland	47°55'N	7°54'E	1205
	DE4	D4	Deuselbach	49°46'N	7°03'E	480
	DE5	D5	Brotjacklriegel	48°49'N	13°13'E	1016
	DE7	D2	Neuglobsow	53°09'N	13°02'E	62
	DE8	D8	Schmücke	50°39'N	10°46'E	937
	DE9	-	Zingst	54°26'N	12°44'E	1
Greece	GR1	GR1	Aliartos	38°22'N	23°05'E	110
Hungary	HU2	H1	K-puszta	46°58'N	19°35'E	125
Iceland	IS2	IS2	Irafoss	64°05N	21°01'W	61
Ireland	IE1	IR1	Valentia Observatory	51°56'N	10°15'W	9
	IE2	IR2	Turlough Hill	53°02'N	6°24'W	420
	IE3	-	The Burren	53°00'N	7°27'W	90
	IE4	-	Ridge of Capard	53°07'N	9°20'W	340
Italy	IT1	I1	Montelibretti	42°06'N	12°38'E	48
	IT4	I4	Ispra	45°48'N	8°38'E	209
Latvia	LV10	SU10	Rucava	56°13'N	21°13'E	18
	LV16	-	Zoseni	57°08'N	25°55'E	183
Lithuania	LT15	SU15	Preila	55°21'N	21°04'E	5
Netherlands	NL9	-	Kollumerwaard	53°20'N	6°17'E	0
	NL10	-	Vreedepeel	51°32'N	5°51'E	28
Norway	NO1	N1	Birkenes	58°23'N	8°15'E	190
	NO8	N8	Skreådalen	58°49'N	6°43'E	475
	NO15	N15	Tustervatn	65°50'N	13°55'E	439
	NO39	N39	Kårvatn	62°47'N	8°53'E	210
	NO41	N41	Osen	61°15'N	11°47'E	440
	NO42	N42	Spitzbergen, Zeppelinfjell	78°54'N	11°53'E	474
	NO55	N42	Karasjok	69°28'N	25°13'E	333

Table 1 cont.:

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
Poland	PL2	PL2	Jarczew	51°49'N	21°59'E	180
	PL3	PL3	Sniezka	50°44'N	15°44'E	1604
	PL4	-	Leba	54°45'N	17°32'E	2
	PL5	-	Diabla Gora	54°09'N	22°04'E	157
Portugal	PT1	P1	Braganca	41°49'N	6°46'W	691
	PT3	P3	V. d. Castelo	41°42'N	8°48'W	16
	PT4	P4	Monte Velho	38°05'N	8°48'W	43
Russian Federation	RU1	SU1	Janiskoski	68°56'N	28°51'E	118
	RU13	SU13	Pinega	64°42'N	43°24'E	28
	RU16	-	Shepeljovo	59°58'N	29°07'E	4
Slovenia	SI8	-	Iskrba	45°34'N	14°52'E	520
Slovakia	SK2	CS2	Chopok	48°56'N	19°35'E	2008
	SK4	-	Stará Lesná	49°09'N	20°17'E	808
	SK5	-	Liesek	49°22'N	19°41'E	892
	SK6	-	Starina	49°03'N	22°16'E	345
Spain	ES1	E1	San Pablo	39°33'N	4°21'W	917
	ES3	E3	Roquetas	40°49'N	0°30'W	50
	ES4	E4	Logrono	42°27'N	2°30'W	445
	ES5	-	Noya	42°44'N	8°55'W	685
	ES6	-	Mahon	39°52'N	4°19'E	78
	ES7	-	Viznar	37°14'N	3°32'W	1265
Sweden	SE2	S2	Rörvik	57°25'N	11°56'E	10
	SE5	S5	Bredkälen	63°51'N	15°20'E	404
	SE8	S8	Hoburg	56°55'N	18°09'E	58
	SE11	S11	Vavihill	56°01'N	13°09'E	172
	SE12	S12	Aspvreten	58°48'N	17°23'E	20
	SE13	S13	Esrange	67°53'N	21°04'E	475
Switzerland	CH1	CH1	Jungfraujoch	46°33'N	7°59'E	3573
	CH2	CH2	Payerne	46°48'N	6°57'E	510
	CH3	CH32	Tänikon	47°29'N	8°54'E	540
	CH4	-	Chaumont	47°03'N	6°59'E	1130
	CH5	-	Rigi	47°04'N	8°28'E	1030
Turkey	TR1	-	Cubuk II	40°30'N	33°00'E	1169
United Kingdom	GB2	UK2	Eskdalemuir	55°19'N	3°12'W	243
	GB4	UK4	Stoke Ferry	52°34'N	0°30'E	15
	GB6	UK6	Lough Navar	54°26'N	7°54'W	126
	GB7	UK7	Barcombe Mills	50°52'N	0°02'W	8
	GB13	UK13	Yarner Wood	50°36'N	3°43'W	119
	GB14	UK14	High Muffles	54°20'N	0°48'W	267
	GB15	UK15	Strath Vaich Dam	57°44'N	4°46'W	270
	GB16	UK16	Glen Dye	56°58'N	2°25'W	85
	GB36	-	Harwell	51°34'N	1°18'W	137
	GB37	-	Ladybower	53°23'N	1°45'W	420
	GB38	-	Lullington Heath	50°47'N	0°10'W	120
	GB43	-	Narberth	51°14'N	4°42'W	160
	GB45	-	Wicken Fen	52°18'N	0°18'W	5
Yugoslavia	YU5	YU5	Kamenicki vis	43°24'N	21°57'E	813
	YU8	-	Zabljak	43°09'N	19°08'E	1450

3. Site codes

The site codes used in this report are the new codes as introduced during 1992. The change in relation to the previous, is mainly that ISO codes are used for countries. The station numbers have as far as possible been retained. More details about the change of site codes can be found in the annual report for 1992.

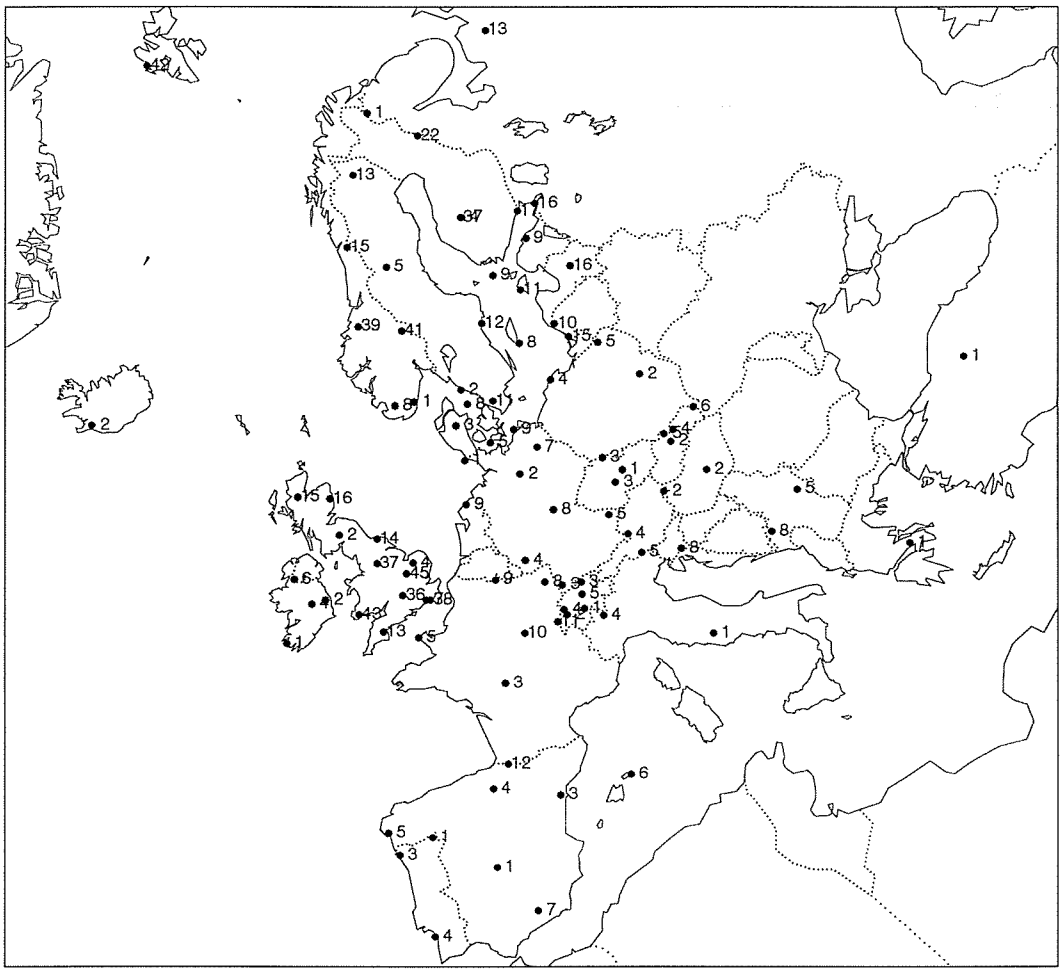

Figure 1: Location of the EMEP monitoring stations in operation in 1997. Sites with ozone/VOC measurements only are not included.

4. The measurement programme during 1997

EMEP's measurement programme during the sixth phase is presented in Table 2. Many sites had however, even during 1997, a less extensive measurement programme, as can be seen from the data tables in this report. Most sites measure air as well as precipitation components. However, some sites perform either the one or the other type of measurements.

Table 2: EMEP's measurement programme 1997.
Sampling periods are 24 hours except for ozone and VOC.

	Components	Measurement period	Measurement frequency
Gas	SO_2, NO_2 O_3 Light hydrocarbons C_2-C_7* ketones and aldehydes (VOC)	24 hours Hourly means stored 10 - 15 minutes 8 hours	Daily Continuously Twice weekly Twice weekly
Particles	SO_4^{2-}	24 hours	Daily
Gas + particles	HNO_3 (g) + NO_3^- (p) NH_3 (g) + NH_4^+ (p)	24 hours	Daily
Precipitation	Amount of precipitation, SO_4^{2-}, NO_3^-, Cl^-, pH/H^+ NH_4^+, Na^+ Mg^{2+}, Ca^{2+}, K^+, conductivity	24 hours	Daily

* Measurements are made at a small number of sites only.

An evaluation of the VOC measurement programme within EMEP has been published earlier (Solberg et al., 1995). The VOC data from 1997 was reported separately by Solberg et al. (1998). The ozone data from 1997 was reported by Hjellbrekke (1999).

5. Sampling and analytical methods

The recommended procedures for sampling and analysis of precipitation and air are described in the EMEP Manual for sampling and chemical analysis. The manual has been updated and the final version was sent out in 1996 (EMEP/CCC-Report 1/95). The methods used by the participating countries are given in Annex 1.

6. Laboratory intercomparison

During 1997 the 16th laboratory intercomparison of analytical methods was carried out. As usual most of the laboratories report acceptable data, but there are still some outliers. The intercomparison results are presented in EMEP/CCC Report 2/97.

7. Data from the monitoring stations

The data sent to CCC on diskettes or transferred through Internet, are checked and stored in the CCC database.

Data on particulate nitrate and ammonium have been forwarded to the CCC since 1987. It should, however, be noticed that some of these data are from filter sampling, where no steps have been taken to avoid chemical reactions, and that such reactions can cause inaccurate results.

8. Calculation of excess sulphate in precipitation

The sulphate in precipitation is stored in the database as reported, i.e. total sulphate, and as corrected, non-marine sulphate, i.e. total sulphate minus sulphate originating from sea-salt particles.

When the sulphate concentrations originating from sea-salt are larger than the total sulphate, and the corrected sulphate concentrations consequently become less than zero, negative concentrations have been stored in the data base and have been used to calculate averages in the report in order to avoid lias in the aggregates. Negative concentrations are mainly caused by random errors in the data.

CCC has implemented a new routine for calculation of the marine contribution to sulphate in precipitation. This new routine which is worked out by the CAPMoN has already been adopted by the WMO GAW. A series of EMEP's sites will also report data to WMO through the CCC if the Steering Body agrees, and common routines will necessarily fill the data bases with identical data. This is consequently a step in a harmonisation process between EMEP and WMO GAW.

Excess sulphate data as calculated with the old routine will be available from the CCC as a continuation of the data series upon request. The sulphate data presented in the current and future data reports as well as data copied to other institutions in the future, will be based on the new routine.

The CAPMoN routine give priority to sodium, magnesium and chloride as in EMEP's old routine, and this is supplemented with inspections of the ratios between the three elements. From the ratios it is possible to find the presumably most correct sea salt element and this makes clearly an improvement of the calculation.

The difference between the old and new routine can be illustrated by Figure 2 with data from Valentia Observatory in Ireland, a site highly exposed to sea salt. The Figure shows that data on the excess sulphate concentrations often will be higher with the new procedure at Valentia Observatory, and that consequently the average concentrations of excess sulphate in precipitation will be somewhat higher. Since the calculations are based on an attempt to pick the most accurate sea salt element when possible, the new data on excess sulphate in precipitation are better estimates than the old ones at sites exposed to sea salts. The more important the marine sulphate is compared with the anthropogenic sulphate, the larger the difference will be. At sites with none or only small concentrations of sea salts, as at most of the EMEP sites, the two routines have small differences as shown with data from Kosetice in the Czech Republic in Figure 3.

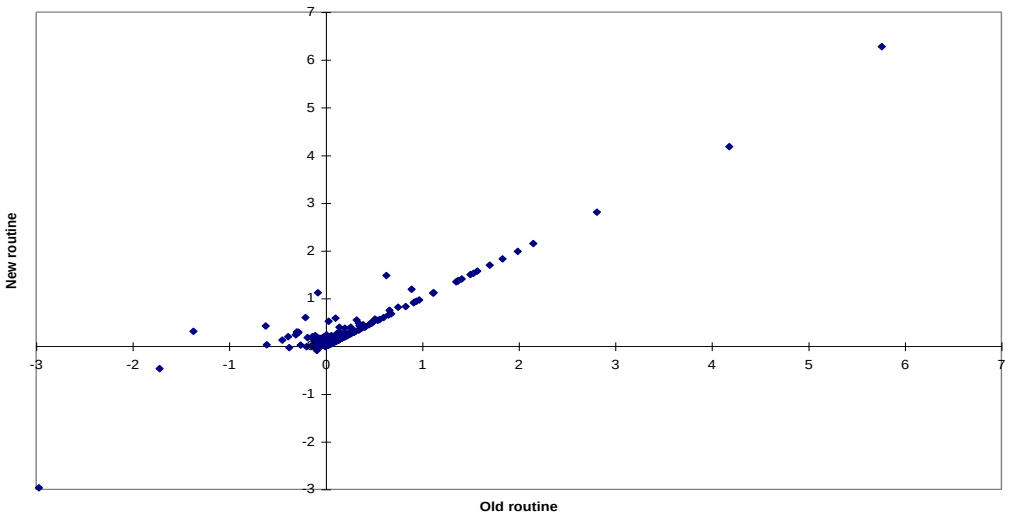

Figure 2: Excess sulphate 1994 calculated with old and new routine for Valentia Observatory.

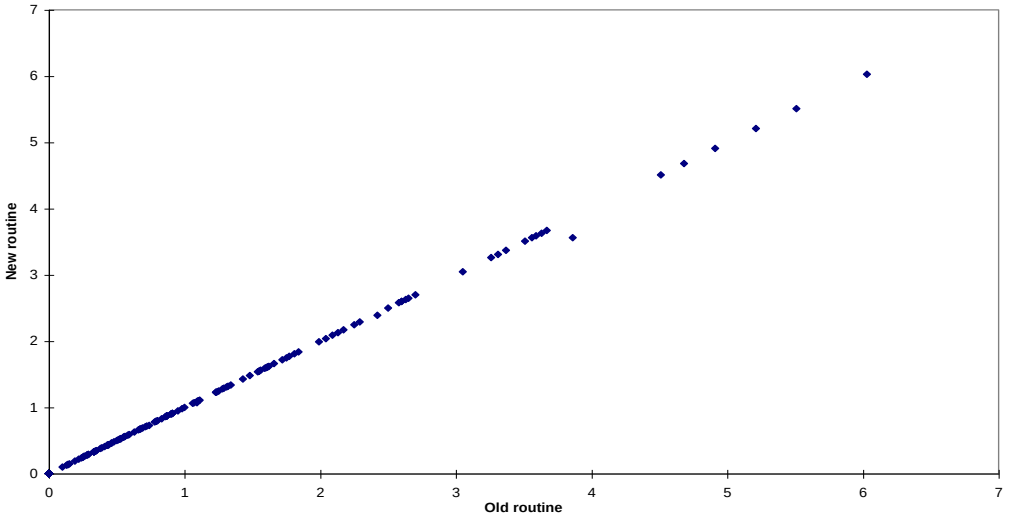

Figure 3: Excess sulphate 1994 calculated with old and new routine for Kosetice.

9. Data flagged in this report

EMEP's data quality objectives (DQO, Annex 5) were set to provide sufficiently accurate data for EMEP's needs. They have been discussed and accepted at the Steering Body in 1996, and the participating laboratories have consequently to provide data meeting the DQO in order to have them accepted by EMEP.

The Parties to the Convention are obliged to make this goal attainable to their own EMEP laboratories. The laboratories must therefore be sufficiently funded to do

their measurements in accordance with recommended methods and instrumentation in field and in laboratory. Although a harmonisation and standardisation of methods is strongly needed, methods equivalent to the recommended ones may be acceptable if the participant has demonstrated that the data meet the DQO. Secondly, and of greatest importance is to have sufficient funding to be able to implement quality assurance good enough to provide data meeting the DQO.

The requirements have been based on the annual laboratory comparisons 15 and 16 from the years 1995 and 1997 and are related to an average performance as proposed in the Steering Body meeting in 1996. The requirements will flag data from laboratories which are assumed to have precipitation data or air data with a generally lower quality than the DQO. They will, however, not flag all data less accurate than the DQO.

The requirements for flagging the data sets are:

I - invalid:

The average deviation from expected values obtained in the two comparisons for a component is greater than 20% (0.2 pH units for pH), or the deviation from expected value obtained in one of the intercomparisons is greater than 25%

Q - qualified:

The average deviation from expected values obtained in the two comparisons for a component is greater than 15% (10% for NO_2, SO_2, NO_3^-, SO_4^{2-}, 0.1 pH units for pH), and the deviation from expected value obtained in both of the intercomparisons is less than 25%.

Not flagged - valid:

The average deviation from expected values obtained in the two comparisons for a component is less than 15% (10% for NO_2, SO_2, NO_3^-, SO_4^{2-}, 0.1 pH units for pH), and the deviation from expected value obtained in both of the intercomparisons is less than 25%.

The data sets from the following Parties are flagged as invalid (I):

Air components:

SO_2: Greece, Latvia, Lithuania, Portugal, Turkey
NO_2: Hungary
SO_4^{2-}: Greece

Precipitation components:

SO_4^{2-}: Croatia, Latvia
NO_3^-: Yugoslavia
NH_4^+: Spain, Italy, Yugoslavia
pH: Hungary, Italy
Ca^{2+}: Spain, Croatia, Hungary, Italy
Mg^{2+}: Croatia

Na^+: Croatia, Hungary
Cl^-: Hungary, Yugoslavia
K^+: Spain, Hungary, Ireland (EPA), Russia

Improvements have been made in Hungary since 1995 and the results from the 16th comparison in 1997 were generally good, and better than the DQO. Improved results in the 16th laboratory comparison have also been forwarded by Estonia, Latvia, and Yugoslavia.

The data, which are flagged in this report, will be available from the CCC upon request if they have been forwarded to the database. They contain information about concentrations as the accepted data do, but generally with a lower accuracy.

10. Annual summaries of the data

10.1 Maps over Europe

Geographical distributions of sulphur and nitrogen compounds based on both modelled and observed concentrations in 1997 are published in a joint MSC-W/ CCC summary report (EMEP, 1999).

10.2 Annual summaries in tables

Annual summaries of the precipitation data are given in Annex 2 and of the air data in Annex 3. The precipitation component summaries contain:

- the precipitation weighted arithmetic mean value,
- the minimum and maximum daily concentrations,
- the wet deposition,
- percent of total precipitation amount analysed for a specific component (completeness for precipitation data),
- the number of data below the detection limit,
- and a sampling flag which gives information about deviations from the EMEP sampling procedures.

The wet depositions have been obtained by multiplying the weighted mean concentration by the total amount of precipitation in the period. The concentrations for days with missing precipitation data have consequently been assumed to be equal to the weighted average of the period.

Concentrations less than zero may exist in the database for sulphate in precipitation corrected for sea-salt. This occurs whenever the sea-salt contribution is larger than the total sulphate concentration, and it is caused by random errors in the results. The negative values have been included in the estimation of the weighted arithmetic mean values.

For air components the arithmetic mean and the geometric mean have been computed together with their standard deviations. The definitions are given on the next three pages. The geometric standard deviation is a dimensionless factor. If the data

come from a random sample of independent data in a normal distribution, about 95% of the data will lie between

$$\overline{c_a} - 2sd_a \; and \; \overline{c_a} + 2sd_a$$

and between

$$\frac{\overline{c_g}}{sd_g^2} \; and \; \overline{c_g} \cdot sd_g^2$$

if the data come from a lognormal distribution. The minimum, maximum, 5 and 95 percentiles are also presented in Annex 3. As a measure of the completeness of the dataset, the percentage of samples analysed in the period has been printed.

In the computations of mean values and other statistics, the concentrations below the detection limit have been set equal to one half of the actual limit. An overview of the statistics and definitions is given below.

W.mean $\hat{c}$ is the precipitation weighted arithmetic mean concentration used for precipitation components:

$$\hat{c} = \frac{1}{\sum_i p_i} \cdot \sum_i c_i \cdot p_i$$

where p_i is precipitation amount day i with the measured concentration c_i of a specific component.

Arit mean $\overline{c_a}$ is the arithmetic mean value used for air components only, and N is number of days with data:

$$\overline{c_a} = \frac{1}{N} \sum_i c_i$$

Arit sd sd_a is the arithmetic standard deviation from the arithmetic mean value. It is computed for air components only:

$$sd_a = \left(\frac{\sum_i (c_i - \overline{c_a})^2}{N-1} \right)^{\frac{1}{2}}$$

Geom mean — $\overline{c_g}$ is the geometric mean value used for air components only, and it is computed from the arithmetic mean of ln c:

$$\overline{lnc} = \frac{1}{N} \cdot \sum_i lnc_i$$

$$\overline{c_g} = exp\left(\overline{lnc}\right)$$

Geom sd — sd_g is the geometric standard deviation from the geometric mean value. It is computed for air components only, and it is based on the standard deviation of ln c:

$$sdlnc = \left(\frac{\sum_i \left(lnc_i - \overline{lnc}\right)^2}{N-1} \right)^{\frac{1}{2}}$$

$$sd_g = exp\left(sdlnc\right)$$

Min — is the minimum value reported for a specific component, and it is printed both for precipitation and air components.

5% — is the 5 percentile computed from the histogram of the daily results. The data have been divided into 30 classes of equal size with the addition of two extreme classes. The 5 percentile has been computed by linear interpolation of the two closest class marks. The percentile has been computed for air components only.

50% — is the 50 percentile, defined as above and computed for air data only.

95% — is the 95 percentile, defined as above and computed for air data only.

Max — is the maximum value reported for a specific component, and it is given for precipitation and air components.

Dep — is the wet deposition of a specific precipitation component. The deposition is the product of the total precipitation amount measured and the weighted arithmetic mean of a component measured at a site.

% anal — for precipitation components this is the percent of the total precipitation reported analysed for a specific component, and for air components based on the number of days with data.

Num bel — is the number of data below the detection limit (not used for precipitation amount).

Num day — is the number of days with measurements for a specific component.

Samp flag — is a two character code which gives information about routine-wise deviation from the EMEP sampling length and frequency. The code used in this report is:

W: weekly sampling
M: monthly sampling

The units used for the results in this report are given in Table 3 and Table 4.

Table 3: Units used for precipitation components.

Precipitation components	Units for W. mean, Min Max	Units for depositions
Amount	mm	mm
SO_4^{--}	mg S/l	mg S/m^2
NO_3^-	mg N/l	mg N/m^2
Cl^-	mg Cl/l	mg Cl/m^2
NH_4^+	mg N/l	mg N/m^2
H^+	µe H^+/l	µe H^+/m^2
pH	pH-units	µe H^+/m^2
Na^+	mg Na/l	mg Na/m^2
Mg^{2+}	mg Mg/l	mg Mg/m^2
K^+	mg K/l	mg K/m^2
Ca^{2+}	mg Ca/l	mg Ca/m^2

Table 4: Units used for air components.

Air components	Units for arithmetic and geometric mean values, arithmetic standard deviations, Min., Max, percentiles.
SO_2	µg S/m^3
NO_2	µg N/m^3
HNO_3	µg N/m^3
NH_3	µg N/m^3
SO_4^{2-}	µg S/m^3
NO_3^-	µg N/m^3
NH_4^+	µg N/m^3
H^+	ne H^+/m^3
SPM	µg/m^3
$HNO_3 + NO_3^-$	µg N/m^3
$NH_3 + NH_4^+$	µg N/m^3

The start hours for the sample collections for the period covered by this report are given in Table 5.

Table 5: Start hours for sampling (GMT) in 1997.

Site	Prec.	Air	Site	Prec.	Air
AT 2	08	-	HR 2	06	06
AT 3	08	-	HR 4	06	06
AT 4	08	-			
			HU 2	07	07
CH 1	-	08			
CH 2	08	08	IE 1	10	10
CH 3	-	08	IE 2	(1)	(1)
CH 4	-	08			
CH 5	-	08	IS 2	09	09
CS 1	07	07	IT 1	(1)	(1)
CS 3	07	07	IT 4	10	10
DE 1	07	00	LT15	09	09
DE 2	07	00			
DE 3	07	00	LV10	09	09
DE 4	07	00	LV16	-	09
DE 5	07	00			
DE 7	07	00	NL 9	07	07
DE 8	07	00	NL10	07	07
DE 9	07	00			
DE12	-	00	NO 1	07	07
DE14	-	00	NO 8	07	07
DE17	-	00	NO15	07	07
DE18	-	00	NO30	07	07
DE19	-	00	NO39	07	07
			NO41	07	07
DK 3	07	07	NO42	-	07
DK 5	07	07			
DK 8	07	07	PL 2	06	06
			PL 3	06	06
ES 1	07	07	PL 4	06	06
ES 2	07	07	PL 5	06	06
ES 3	07	07			
ES 4	07	07	PT 1	09	-
ES 5	07	07	PT 3	09	-
ES 6	07	07	PT 4	09	09
FI 4	06	06	RU 1	(1)	(1)
FI 9	06	06	RU13	(1)	(1)
FI17	06	06	RU14	(1)	(1)
FI22	06	06	RU16	(1)	(1)
FR 3	09	09	SE 2	06	06
FR 5	09	09	SE 5	06	06
FR 8	09	09	SE 8	-	06
FR 9	09	09	SE11	06	06
FR10	09	09	SE12	06	06
FR11	09	09	SE13	-	09
FR12	09	09			
			SK 2	07	07
GB 2	07	07	SK 4	07	07
GB 4	-	07	SK 5	07	07
GB 6	07	07	SK 6	07	07
GB 7	-	07			
GB13	07	07	TR 1	00	00
GB14	07	07			
GB15	07	70	YU 5	(1)	(1)
GB16	-	07	YU 8	(1)	(1)
GR1	-	00			

(1) : Not reported

11. Update

The data compiled in this report represent the best data available at present. If any further errors are detected, the data will be corrected in the database. It is important that users make certain that they have access to the most recent version of the database. For the data presented here the latest alteration was 14 July, 1999.

Scientific use of the EMEP data should be based on fresh copies of the data. Copies can be requested from the CCC (e-mail: anne-gunn.hjellbrekke@nilu.no). Information about the EMEP network and measurement data can also be found on CCC's internet pages: http://www.nilu.no/projects/ccc/index.html

12. References

A list of data reports from EMEP/CCC can be found in Annex 4.

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13. Acknowledgements

A large number of anonymous co-workers in participating countries have been involved in the many steps of collection of EMEP´s air and precipitation data. A list of participating institutes can be seen below. The staff at CCC wishes to express their gratitude and appreciation for continued good co-operation and efforts. The secretarial work has been performed by Ms. Kristine Aasarød.

14. List of participating institutions

Austria	Umweltbundesamt
Commission of the European Communities	Joint Research Center. Ispra Establishment
Croatia	Meteorological and Hydrological Service of Croatia
Czech Republic	Czech Hydrometeorological Institute
Denmark	National Environmental Research Institute
Finland	Finnish Meteorological Institute
France	I' Ecole des Mines de Douai Laboratories Wolff
Germany	Umweltbundesamt
Greece	Ministry of Environmental Physical Planning and Public Works
Hungary	Institute for Atmospheric Physics, Dep. for Air Chemistry
Iceland	The Icelandic Meteorological Office
Ireland	Meteorological Service H.Q. Environmental Protection Agency (EPA) Electricity Supply Board (ESB)
Italy	C.N.R. Istituto Inquinamento Atmosferico
Latvia	Latvian Hydrometeorological Agency
Lithuania	Institute of Physics
Netherlands	National Institute for Public Health and Environmental Protection (RIVM)
Norway	Norwegian Institute for Air Research (NILU)
Poland	Institute of Meteorology and Water Management Institute of Environmental Protection
Portugal	Ministério do ambiente e recursos naturais
Russian Federation	Institute of Global Climate and Ecology
Slovak Republic	Slovak Hydrometeorological Institute
Spain	Dirección General de Calidad y Evaluacíon Ambiental
Sweden	Swedish Environmental Research Institute (IVL)
Switzerland	Swiss Federal Laboratory of Testing Materials and Research (EMPA)
Turkey	Refik Saydam Centre of Hygiene
United Kingdom	AEA Technology
Yugoslavia	Federal Hydrometeorological Institute

Annex 1

Overview of sampling and analytical methods 1997

This Annex gives an overview of the sampling and analytical methods in use in the participating countries during 1996. The information given is mostly based on answered questionnaires issued by the CCC.

Table 1.1 shows the sampling techniques used for precipitation and aerosol components in the different countries. Table 1.2 shows the corresponding information for gases and Table 1.3 information on sampling for the sum of aerosols and gases.

Table 1.4 shows the analytical methods used for components in aerosols, for gases and for the sum of aerosols and gases. Several combinations of reagents can be used in the Griess method for measurements of nitrogen dioxide and in the data reports different combinations have been given different names, e.g. NEDA and ANSA in the past. Due to the increasing number of different reagent combinations, no distinction was made in 1996 between the different procedure which have all been referenced to as Griess method in Tables 1.4 and 1.7.

Table 1.5 shows the methods used for components in precipitation.

Tables 1.6 to 1.15 give the code numbers for the methods used in Tables 1.4 and 1.5.

Table 1.1: Techniques for sampling of precipitation and for aerosols in 1997.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Austria	Wet only	Schleicher und Schüll TE 36 Membranfilter 0.45 µm, 47 mm diameter, 2.7 Nm^3/day	-	-
Croatia	Bulk	-	-	-
Czech Republic	Bulk and wet-only	Whatman 40 filter 6-8 m^3/day	Schleicher and Schüll TE36 0.45 µm 5 m^3/day	As for ammonium
Denmark	Wet-only	Mixed cellulose ester filter Millipore RAWP 1.2 µm 58 m^3/day	-	-
Estonia	Bulk	Whatman 40 filter 4-5 m^3/day	-	-
Finland	Bulk	Whatman 40 filter 24 m^3/day	-	-
France	Wet-only	Whatman 40 filter 2.5 m^3/day	-	-

Table 1.1 cont.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Germany	Bulk	Schleicher & Shüll 589/2L filter 1.0 m^3/day	-	-
Greece	Wet only	Whatman 41 filter 1.1 m^3/day	-	-
Hungary	Wet only	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	As for particulate sulphate	As for particulate sulphate
Iceland	Bulk	Whatman 40 filter 20-25 m^3/day	-	-
Ireland	Bulk (IE1) Wet only (IE2, IE3, IE4)	Whatman 40 filter 20-25 m^3/day (IE1) Gelman GN-6 Metricel filter 20 m^3/day (IE2, IE3, IE4)	-	-
Italy	Wet only	Teflon filter Gelman Zeflour 1 μ. 17 m^3/day	Teflon filter (as for sulphate) + phosphorous acid impregnated filter	As for sulphate + Nylasorb filter
Latvia	Bulk (LV16) Wet only (LV10 from July 1996)	Whatman 40 filter 14-20 m^3/day	Whatman 40 filter 18-28 m^3/day	As for particulate sulphate
Lithuania	Wet only	Whatman 40 filter, 24 m^3/day	As for particulate sulphate	As for particulate sulphate
Netherlands	Wet only	Whatman 42 filter 2.5 m^3/day Filter mounted behind denuder	As for particulate sulphate	As for particulate sulphate.
Norway	Bulk	Teflon filter, Gelman Zefluor 2 μm 25 m^3/day	-	-
Poland	Bulk	Whatman 40 filter 3.5-4 m^3/day PL 5: 3.5-5 m^3/day	As for particulate sulphate	PL 5: As for particulate sulphate
Portugal	Bulk	-	-	-
Russian Fed.	Bulk	Whatman 40 filter 10-15 m^3/day	As for particulate sulphate	As for particulate sulphate
Slovakia	Wet only	Whatman 40 filter 6-8 m^3/day	-	Whatman 40 filter 6-8 m^3/day

Table 1.1 cont.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Slovenia	-	Teflon filter, Gelman Zefluor 2 µm, 22 m^3/day	-	-
Spain	Wet only	Whatman GF/A filter 770 m^3/day	As for particulate sulphate	-
Sweden	Wet only	Teflon filter Gelman Zefluor 2 µm 20 m^3/day	-	-
Switzerland	Wet only CH2	Schleicher & Schüll filter 589/4, 3.6 m^3/day (CH2,3,4,5), 4.1 m^3/day (CH1)	-	-
Turkey	Wet only	Whatman 40 filter 35 m^3/day	See sum of gases and aerosols	See sum of gases and aerosols
United Kingdom	Wet only. Bulk at GB2	Whatman 40 filter 2-4 m^3/day	-	-
Yugoslavia	Bulk	-	-	-
CEC (IT 4)	Wet only	Cellulose acetate 0.8 µm filter 12 m^3 day	As for particulate sulphate	As for particulate sulphate

Table 1.2: Techniques for sampling of gases in 1997.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Austria	Instrumental: DOAS	DOAS	-	-
Croatia	Absorbing solution TCM, 1.6-2.5 m^3/day	Absorbing solution Trietanolamin 1.6-2.5 m^3/day	-	-
Czech Republic	KOH-impregnated Whatman 41 filter 6-8 m^3/day	Impregnated filter NaOH and guajacol Whatman 40 0.72 m^3/day	Oxalic acid imp. Whatman 41 filter 5 m^3/day	NaCl-impregnated Whatman 41 filter 0.72 m^3/day
Denmark	NaF-impregnated + KOH-impregnated Whatman 41 filters 58 m^3/day	KI-method (glass sinter) 0,7 m^3/day	-	-

Table 1.2 cont.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Estonia	Instrumental UV-fluorescens at Vilsandi	Absorbing tubes KI solution, 0.3 m^3/day at Lahemaa; Instrumental: chemiluminescence at Vilsandi	-	-
Finland	NaOH-impregnated Whatman 40 filter 24 m^3/day	Instrumental: chemiluminescence	-	-
France	Absorbing solution H_2O_2. 2.5 m^3/day	-	-	-
Germany	Absorbing solution TCM 1.0 m^3/day	Absorbing solution Saltzman 1 m^3/day		
Greece	Absorbing solution H_2O_2. 1.1 m^3/day	Absorbing solution TGS 1.1 m^3/day	-	-
Hungary	KOH-impregnated Whatman 40 filter, 25 m^3/day	Iodide method (impregnated glass sinter) 0.7 m^3/day	Diffusion tube. Coating: oxalic acid. 4 m^3/day	
Iceland	KOH-impregnated Whatman 40 filter 20-25 m^3/day	-	-	-
Ireland	KOH-impregnated Whatman 40 filter 20-25 m^3/day	Absorbing solution TGS 1.5-1.6 m^3/day	-	-
Italy	Diffusion tubes NaCl and Na_2CO_3 + glycerine 17 m^3/day	Instrumental: Chemilumin-escence	Diffusion tubes coated with phosphorous acid	Diffusion tubes NaCl 17 m^3/day
Latvia	NaOH-impregnated Whatman 40 filter 14-20 m^3/day	Absorbing KI solution in absorbing tubes with glass granules, 0.2-0.4 m^3/day	Whatman 40 filter 18-28 m^3/day	As for sulphur dioxide
Lithuania	KOH-impregnated Whatman 40 filter, 24 m^3/day	Absorbing solution KI; 0.72 m^3/day	-	-
Netherlands	Instrumental: UV-fluorescence	Instrumental: Chemilumin-escence	Absorption in $NaHSO_4$, membrane sepa-ration, conductivity measurement	-
Norway	KOH-impregnated Whatman 40 filter 25 m^3/day	Iodide method (impregnated glass sinter) 0.7 m^3/day	-	-

Table 1.2 cont.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Poland	KOH-impregnated Whatman 40 filter 3.5-4 m^3/day PL 5: 35-5 m^3/day	Absorbing solution TGS 0.7 m^3/day PL5: 0.3-0.7m^3/day	- -	- -
Russian Federation	NaOH-impregnated Whatman 40 filter 10-15 m^3/day	Absorbing tubes KI 0.3 m^3/day		
Slovakia	KOH-impregnated Whatman 41 filter 6-8 m^3/day	Absorbing solution NaOH and guajacol 0.5 m^3/day	-	KOH-impregnated Whatman 41 filter 6-8 m^3/day
Slovenia	KOH-impregnated Whatman 40 filter, 22 m^3/day	-	-	-
Spain	Absorbing solution H_2O_2 2 m^3/day	Absorbing solution Trietanolamine 1 m^3/day	-	-
Sweden	KOH-impregnated Whatman 40 filter 20 m^3/day	NaI-impregnated glass sinters ~0.7 m^3/day	-	-
Switzerland	CH1: Absorbing solution H_2O_2 4.1 m^3/day CH2,3,4,5: Instrumental UV-fluorescence	Instrumental: Chemilumin-escence; Cranox at CH1	-	-
Turkey	Absorbing solution TCM 1 m^3/day	Absorbing solution Saltzman 1 m^3/day	See sum of gases and aerosols	See sum of gases and aerosols
United Kingdom	Absorbing solution H_2O_2 2-4 m^3/day	Instrumental: Chemilumin-escence	-	-
Yugoslavia	Absorbing solution TCM, 1.6-2.5 m^3/day	Absorbing solution TGS, 1.6-2.5 m^3/day	-	-
CEC (I4)	Instrumental UV-fluorescence	Instruemtal: Chemi-luminescence	-	-

Table 1.3: Techniques for sampling of sums of gases and aerosols in 1997.

	Ammonia and ammonium	Nitric acid and nitrate
Denmark	Aerosolfilter as for sulphate + Oxalic acid impregnated Whatman 41, 58 m^3/day	Aerosolfilter as for sulphate + NaF-impregnated Whatman 41, 58 m^3/day
Finland	Oxalic acid impregnated Whatman 40 filter, 24 m^3/day	Whatman 40 + NaOH impregnated Whatman 40 filter, 14-20 m^3/day
Hungary	-	KOH-impregnated Whatman 40 filter, 25 m^3/day
Latvia	Whatman 40 filter, 18-28 m^3/day	Whatman 40 + NaOH impregnated Whatman 40 filter, 24 m^3/day
Lithuania	Oxalic acid impregnated Whatman 40 filter, 16-17 m^3/day	KOH impregnated Whatman 40 filter, 16-17 m^3/day
Norway	Aerosolfilter as for sulphate + Oxalic acid imp. filter, 25 m^3/day	Aerosolfilter as for sulphate + KOH-imp.filter as for sulphur dioxide, 25 m^3/day
Poland	Oxalic acid impregnated Whatman 40 filter, 4 m^3/day	NaOH impregnated Whatman 40 filter, 4 m^3/day
Russian Federation	Oxalic acid impregnated Whatman 40 filter 10-15 m^3/day	-
Slovenia	Aerosol filter as for sulphate + oxalic acid impregnated Whatman 40 filter, 22 m^3/day	Aerosol filter as for sulphate + oxalic acid impregnated Whatman 40 filter, 22 m^3/day
Spain	Oxalic acid impregnated Whatman 40 filter, 35 m^3/day	NaOH impregnated Whatman 40 filter, 35 m^3/day
Sweden	Aerosolfilter as for sulphate + Oxalic acid impregnated Whatman 40 filter, 20 m^3/day	Aerosolfilter as for sulphate + KOH impregnated Whatman 40 filter, 20 m^3/day
Switzerland	Citric acid impregnated Schleicher & Schüll 589/4 filter January-June: 6 m^3/day, July-December 20 m^3/day	NaOH impregnated Schleicher & Schüll 589/4 filter, 6 m^3/day
Turkey	Oxalic acid impregnated Whatman 40 filter 35 m^3/day	KOH impregnated Whatman 40 filter 35 m^3/day
United Kingdom	Citric acid impregnated Whatman 40 filter, 25 m^3/day GB2 and GB14	NaOH impregnated Whatman 40 filter, 25 m^3/day GB2 and GB14

Table 1.4: Analytical methods used by the participants for components in aerosols, for gases, and for the sum of aerosol components and gases in 1997. Method numbers are given in Tables 1.6–1.9.

	SO_4	NH_3/NH_4	HNO_3/NO_3	SO_2	NO_2
Austria	1	-	-	12	12
Belgium	2	-	-	7	3
Croatia	-	-	-	6	2
Czech Republic	2	3	4	3	2
Denmark	10	3	4	1	2
Estonia	1	-	-	1 & 9	2 & 3
Finland	1	1	1	1	3
France	1	-	-	1	-
Germany	2	4	1	6	1
Greece	3	-	-	3	2
Hungary	1	3	1	1	2
Iceland	1	-	-	1	-
Ireland	1	-	-	1	2
Italy	1	1	1	1	3
Latvia	3	3	2	3	2
Lithuania	3/1***	3	2/1***	3/1***	2
Netherlands	1	3	1	9	3
Norway	1	1	1	1	2
Poland	3/1#	2	4	3/1#	2
Russian Fed.	1	1	1	1/9*	2
Slovakia	1	-	1	1	2
Slovenia	1	1	1	1	
Spain	1	3	1	3	2
Sweden	1	4	1	1	2
Switzerland	2	1	1	1/9**	3
Turkey	?	3	1	6	1
United Kingdom	1	1	1	1	3
Yugoslavia	-	-	-	6	2
CEC (I4)	1	1	1	9	3

* 9 at RU1
** 1 at CH1
9 at CH2, CH3, CH4, CH5
*** from 1 May 1997 at LT15
\# 1 at PL5

Table 1.5: Analytical methods used by the participants for components in precipitation in 1997. Methods numbers are given in Tables 1.10–1.15.

	SO_4	NO_3	NH_4	H^+	Mg	Na	Cl	Ca	K
Austria	1	1	1	-	1	1	1	1	1
Belgium	1	1	1	-	3	1	1	3	1
Croatia	4	4	7	6	2	5	2	2	5
Czech Republic	1	1	4/6	6	6	4	1	6	4
Denmark	1	1	5	6	2	5	1	2	5
Estonia	1	1	5	-	2	3	1	3	3
Finland	1	1	1	6	1	1	1	1	1
France	1	1	4	6	1	1	1	1	1
Germany	1	1	4	-	3	6	1	3	6
Greece	3	5	5	-	-	3	2	3	3
Hungary	1	1	5	3	2	2	1	7	2
Iceland	1	-	-	-	-	5	-	-	-
Ireland	1	1/3**	1/4**	-	1	1	1	1	1
Italy	1	1	1	-	1	1	1	1	1
Latvia	1/2	1/2	5	-	2	2	1	7	2
Lithuania	2/1*	2/1*	5	6	2	2	2/1*	2	2
Netherlands	1	1	6	5	8	7	1	8	7
Norway	1	1	1	-	1	1	1	1	1
Poland	1	1	3/5#	-	2	5/2#	1	2/7#	5/2#
Portugal	1	1	5	-	3	3	1	3	3
Russian Federation	1	1	1	-	2	1	1	3	1
Slovak Republic	1	1	1	-	1	1	1	1	1
Spain	1	1	5	6	3	3	1	3	6
Sweden	1	1	4	6	1	1	1	1	1
Switzerland	1	1	1	-	1	1	1	1	1
Turkey	1	1	5	6	2	5	1	2	5
United Kingdom	1	1	1	6	1	1	1	1	1
Yugoslavia	2	2	5	-	2	5	2	2	5
CEC (I4)	1	1	1/5	6	1/2	1/2	1	1/2	1/2

* from 1 May 1997 at LT15

** until 1 Sept. 1997 at IE2

\# At PL5 only

Table 1.6: Methods used for analysing sulphur dioxide and sulphate in particles.

Ion chromatography	SO_2	SO_4	1
X-ray fluorescence (XRF)		SO_4	2
Thorin	SO_2	SO_4	3
Ring-oven technique		SO_4	4
Isotopic dilution method	SO_2	SO_4	5
Pararosanilin method	SO_2		6
Flame photometry	SO_2		7
Sulfonazo III, automatic,	SO_2	SO_4	8
UV-fluorescence	SO_2		9
Proton Induced X-ray Emission (PIXE)		SO_4	10
Nephelometry (barium sulphate)	SO_2	SO_4	11
DOAS	SO_2		12

Table 1.7: Methods used for analysing nitrogen dioxide.

Saltzman	1
Griess method	2
Chemiluminescence	3

Table 1.8: Methods used for determination of ammonium in aerosols, ammonia, and the sum of ammonium and ammonia.

Ion chromatography	1
Spectrophotometric, Chloramin T	2
Spectrophotometric, Indophenol method	3
Flow Injection Analysis	4

Table 1.9: Methods used for determination of nitrate in aerosols, nitric acid, and the sum of nitrate and nitric acid.

Ion chromatography	1
Spectrophotometric, Griess after Cd reduction	2
Spectrophotometric, Nitration of sodium salicylate	3
Spectrophotometric, Griess after hydrazine reduction	4

Table 1.10: Methods used for determination of sulphate in precipitation.

Ion chromatography	1
Thorin	2
Isotope dilution	3
Turbidity/Nephelometry (barium sulphate)	4
Sulfonazo III	5

Table 1.11: Methods used for determination of nitrate in precipitation.

Ion chromatography	1
Spectrophotometric Griess method, Cd reduction	2
Spectrophotometric, Flow injection analysis	3
UV-spectrophotometric	4
Other spectrophotometric	5
Griess method, Hydrazine reduction	6
Nesslers method after reduction	7

Table 1.12: Methods used for determination of ammonium in precipitation.

Ion chromatography	1
Spectrophotometric, Nesslers method	2
Spectrophotometric, Chloramin T	3
Spectrophotometric, Flow injection analysis	4
Spectrophotometric, Indophenol method	5
As method 5, using sodium salicylate instead of phenol	6
Gas sensitive electrode	7

Table 1.13: Methods used for determination of strong acid in precipitation.

Coulometric titration method	1
As above, but automatic plotting of Gran's function	2
Alkali titration	3
Gran's plot titration	4
Acid and alkali titration	5
Calculated from pH	6

Table 1.14: Methods used for determination of magnesium and calcium in precipitation.

Ion chromatography	1
Atomic absorption method	2
As method 2 + addition of lanthanium	3
As method 2 + addition of cesium	4
As method 2 + addition of potassium	5
As method 2 + addition of lanthanium, cesium and 8-Chynolynol	6
Atomic emission method	7
Plasma emission spectrometry	8

Table 1.15: Methods used for determination of sodium and potassium in precipitation.

Ion chromatography	1
Atomic emission method	2
As method 2 + addition of cesium	3
As method 2 + addition of lanthanium, cesium and 8-Chynolynol	4
Atomic absorption method	5
As method 5 + addition of cesium	6
Plasma emission spectrometry	7

Table 1.16: Methods used for determination of chloride in precipitation.

Ion chromatography	1
Spectrophotometric, mercury thiocyanate/iron method	2
Ion selective electrode	3
Setpoint titration	4

Annex 2

Annual statistics on precipitation data

AT0002R ILLMITZ AUSTRIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.67	0.06	3.05	268.5	99.5	0	55	
Ca++	1.50	0.40	4.30	600.2	99.5	0	55	
Cl-	0.98	0.10	3.40	394.0	99.8	0	59	
Mg++	0.119	0.033	0.459	47.8	99.5	0	55	
NO3-	0.54	0.14	5.86	215.6	99.8	0	59	
pH	5.23	3.57	6.97	2346.8	99.9	0	61	
K+	0.08	0.01	0.50	31.1	99.5	0	55	
Precip	-	0.0	34.9	400.4	100.0	303	365	
Na+	0.15	0.01	1.16	58.3	99.5	0	55	
SO4-- corr	0.84	0.16	17.49	336.1	99.8	0	59	
SO4--	0.85	0.16	17.55	341.7	99.8	0	59	

AT0004R ST. KOLOMAN AUSTRIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.56	0.00	7.23	680.8	99.4	3	154	
Ca++	0.25	0.00	5.60	300.7	99.4	10	154	
Cl-	0.26	0.10	8.00	322.7	75.7	0	135	
Mg++	0.040	0.004	0.690	49.1	99.4	0	154	
NO3-	0.46	0.06	4.40	557.9	99.6	0	152	
pH	4.86	3.91	7.41	16766.4	99.9	0	160	
K+	0.06	0.00	1.92	79.4	99.5	1	155	
Precip	-	0.0	34.1	1221.9	100.0	196	365	
Na+	0.14	0.01	6.29	169.2	99.4	0	154	
SO4-- corr	0.43	0.02	3.73	526.4	99.6	0	152	
SO4--	0.44	0.02	3.77	540.7	99.6	0	152	

AT0005R VORHEGG AUSTRIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.50	0.00	5.89	444.3	99.3	1	71	
Ca++	0.56	0.00	5.90	491.3	99.3	4	71	
Cl-	0.30	0.06	1.50	263.7	90.2	0	69	
Mg++	0.058	0.003	0.543	50.9	99.3	0	71	
NO3-	0.27	0.01	2.76	238.4	100.0	0	75	
pH	5.52	4.32	8.42	2648.6	100.0	0	76	
K+	0.06	0.00	0.96	55.4	99.3	5	71	
Precip	-	0.0	49.6	879.3	100.0	289	365	
Na+	0.12	0.00	1.12	102.0	99.3	1	71	
SO4-- corr	0.45	0.01	4.54	394.9	100.0	0	75	
SO4--	0.46	0.01	4.55	404.2	100.0	0	75	

CH0002F PAYERNE SWITZERLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.52	0.07	3.82	373.9	98.7	0	102	
Ca++	0.22	0.01	2.64	161.0	98.7	2	102	
Cl-	0.18	0.03	8.62	131.5	98.7	9	102	
Mg++	0.035	0.005	0.569	25.1	98.7	20	102	
NO3-	0.25	0.03	1.40	182.5	98.7	0	102	
pH	5.19	4.07	7.24	4662.9	99.6	0	114	
K+	0.07	0.00	0.94	49.4	98.7	15	102	
Precip	-	0.0	47.6	720.7	100.0	237	365	
Na+	0.11	0.01	4.76	78.5	98.7	7	102	
SO4-- corr	0.32	0.03	1.30	233.9	98.7	0	102	
SO4--	0.33	0.04	1.31	240.4	98.7	0	102	

CH0003F TANIKON SWITZERLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.45	0.05	3.73	434.6	99.1	0	112	
Ca++	0.19	0.01	5.80	187.1	99.1	6	112	
Cl-	0.13	0.03	3.04	124.2	99.1	20	112	
Mg++	0.025	0.005	0.385	24.5	99.1	28	112	
NO3-	0.30	0.04	3.52	292.9	99.1	0	112	
pH	5.11	4.21	7.00	7479.7	99.8	0	122	
K+	0.04	0.00	0.33	34.7	99.1	10	112	
Precip	-	0.0	53.5	971.0	100.0	231	365	
Na+	0.08	0.01	1.60	77.8	99.1	16	112	
SO4-- corr	0.29	0.03	3.46	284.3	99.1	0	112	
SO4--	0.30	0.03	3.51	290.5	99.1	0	112	

CH0004F CHAUMONT SWITZERLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.27	0.01	3.66	265.8	98.8	1	128	
Ca++	0.19	0.01	3.65	186.2	98.8	13	128	
Cl-	0.20	0.05	5.28	198.4	98.8	0	128	
Mg++	0.026	0.005	0.350	25.4	98.8	33	128	
NO3-	0.23	0.03	3.68	227.2	98.8	0	128	
pH	4.98	4.08	6.57	10179.4	99.6	0	141	
K+	0.03	0.00	0.43	33.4	98.8	20	128	
Precip	-	0.0	57.4	970.1	100.0	209	365	
Na+	0.12	0.01	2.96	117.6	98.8	14	128	
SO4-- corr	0.28	0.01	3.02	272.5	98.8	1	128	
SO4--	0.29	0.01	3.06	282.4	98.8	1	128	

CH0005F RIGI SWITZERLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.46	0.01	5.15	480.8	99.0	1	111	
Ca++	0.15	0.01	2.36	156.5	99.0	14	111	
Cl-	0.11	0.03	1.43	120.0	99.0	25	111	
Mg++	0.017	0.005	0.155	17.8	99.0	39	111	
NO3-	0.31	0.03	3.40	322.7	99.0	0	111	
pH	4.97	4.15	6.82	11332.9	99.7	0	124	
K+	0.04	0.00	0.71	44.5	99.0	13	111	
Precip	-	0.0	50.8	1054.9	100.0	229	365	
Na+	0.07	0.01	0.89	75.0	99.0	19	111	
SO4-- corr	0.32	0.01	2.40	343.0	99.0	1	111	
SO4--	0.33	0.01	2.42	348.9	99.0	1	111	

CS0001R SVRATOUCH CZECH REPUBLIC

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.63	0.01	2.83	604.8	79.4	0	30	W
Ca++	0.27	0.06	1.57	262.2	77.6	0	27	W
Cl-	0.25	0.08	2.42	243.8	79.8	0	32	W
Mg++	0.049	0.010	0.360	47.6	77.6	0	27	W
NO3-	0.43	0.15	2.85	412.9	79.8	0	32	W
pH	4.64	3.83	6.64	21866.3	79.8	0	33	W
K+	0.17	0.01	2.98	161.2	77.6	0	27	W
Precip	-	0.0	168.0	965.8	101.6	2	53	W
Na+	0.10	0.01	0.45	95.4	77.6	0	27	W
SO4-- corr	0.84	0.25	4.95	809.0	79.8	0	32	W
SO4-- corr	-	0.25	4.95	-	-	0	32	W
SO4--	0.85	0.25	4.99	817.5	79.8	0	32	W

CS0003R KOSETICE CZECH REPUBLIC W
W
January 1997 - December 1997 W
W

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	W Samp flag
NH4+	0.68	0.02	4.60	459.9	98.4	0	138	Wes
Ca++	0.22	0.02	4.05	151.0	98.3	0	136	
Cl-	0.34	0.01	3.58	226.8	98.1	1	132	
Mg++	0.034	0.001	0.800	22.6	98.3	9	136	
NO3-	0.55	0.10	3.14	369.3	98.1	0	132	
pH	4.47	3.44	6.76	23089.9	98.4	0	138	
K+	0.09	0.00	6.31	61.1	98.1	6	131	
Precip	-	0.0	37.6	673.1	100.0	191	365	
Na+	0.14	0.01	1.38	95.5	98.2	0	135	
SO4-- corr	0.85	0.07	4.35	571.9	98.2	0	133	
SO4--	0.86	0.12	4.36	579.9	98.2	0	133	

DE0001R WESTERLAND GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.59	0.00	7.41	323.9	98.0	2	119	
Ca++	0.60	0.10	4.30	329.8	97.8	0	116	
Cl-	12.53	0.30	449.80	6870.3	98.0	0	120	
Mg++	0.816	0.020	9.120	447.5	97.8	0	116	
NO3-	0.61	0.00	5.49	336.3	98.0	2	120	
pH	4.84	3.78	6.21	7890.2	98.8	0	133	
K+	0.31	0.02	4.80	172.7	97.8	0	116	
Precip	-	0.0	24.8	548.4	100.0	199	365	
Na+	6.68	0.15	99.21	3664.1	97.8	0	116	
SO4-- corr	0.75	-2.71	7.63	409.0	98.0	2	120	
SO4--	1.27	0.37	18.25	697.8	98.0	0	120	

DE0002R LANGENBRUGGE GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.68	0.02	5.74	397.4	98.4	0	130	
Ca++	0.43	0.10	12.60	252.5	97.0	0	122	
Cl-	0.87	0.00	30.90	509.8	98.6	1	129	
Mg++	0.133	0.005	2.540	77.7	97.0	2	122	
NO3-	0.62	0.17	3.53	360.4	98.6	0	129	
pH	4.87	3.77	6.91	7911.7	99.0	0	125	
K+	0.12	0.00	3.75	71.5	97.0	3	122	
Precip	-	0.0	31.2	584.7	100.0	187	365	
Na+	0.44	0.00	34.32	254.3	97.0	9	122	
SO4-- corr	0.71	0.18	5.37	416.4	98.6	0	129	
SO4--	0.75	0.26	5.58	436.5	98.6	0	129	

DE0003R SCHAUINSLAND GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.43	0.00	7.52	698.0	98.4	1	146	
Ca++	0.29	0.00	13.20	465.5	99.6	3	150	
Cl-	0.38	0.00	8.40	627.0	98.4	3	146	
Mg++	0.047	0.005	6.600	77.3	99.6	9	150	
NO3-	0.37	0.10	7.16	605.5	98.4	0	146	
pH	4.90	4.01	6.95	20443.0	99.8	0	159	
K+	0.07	0.00	5.17	110.1	99.6	13	150	
Precip	-	0.0	71.6	1629.4	100.0	187	365	
Na+	0.19	0.00	5.72	311.2	99.6	1	150	
SO4-- corr	0.43	0.14	4.94	704.6	98.4	0	146	
SO4--	0.45	0.14	5.02	730.1	98.4	0	146	

DE0004R DEUSELBACH GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.47	0.08	5.57	313.7	99.5	0	143	
Ca++	0.28	0.10	8.40	190.0	99.6	0	144	
Cl-	0.55	0.00	17.30	368.2	99.6	3	145	
Mg++	0.063	0.005	0.540	42.2	99.6	1	144	
NO3-	0.43	0.13	3.90	287.1	99.6	0	145	
pH	4.81	3.96	6.74	10331.1	99.1	0	134	
K+	0.06	0.00	1.28	41.5	99.6	14	144	
Precip	-	0.0	23.7	670.2	100.0	196	365	
Na+	0.26	0.00	3.89	177.5	99.6	3	144	
SO4-- corr	0.50	0.16	3.41	336.2	99.6	0	145	
SO4--	0.52	0.16	3.52	351.5	99.6	0	145	

DE0005R BROTJACKLRIEGEL GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.74	0.09	4.36	623.6	94.9	0	130	
Ca++	0.30	0.00	2.10	256.5	94.7	3	127	
Cl-	0.27	0.00	12.70	231.0	94.9	5	130	
Mg++	0.033	0.005	0.520	27.7	94.7	17	127	
NO3-	0.56	0.18	3.59	472.7	94.9	0	130	
pH	4.85	3.94	6.48	12010.8	99.2	0	142	
K+	0.09	0.00	1.15	74.3	94.7	6	127	
Precip	-	0.0	26.6	844.7	100.0	210	365	
Na+	0.16	0.00	4.29	135.2	94.7	6	127	
SO4-- corr	0.61	0.13	2.46	513.1	94.9	0	130	
SO4--	0.62	0.14	2.82	524.1	94.9	0	130	

DE0007R NEUGLOBSOW GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.68	0.02	3.76	272.1	97.4	0	78	
Ca++	0.38	0.00	3.70	150.3	97.4	1	78	
Cl-	0.61	0.10	15.90	244.6	97.4	0	78	
Mg++	0.056	0.005	1.250	22.5	97.4	5	78	
NO3-	0.56	0.00	2.73	223.6	97.4	1	78	
pH	4.77	3.78	6.72	6796.0	99.0	0	94	
K+	0.11	0.00	3.63	43.0	97.4	6	78	
Precip	-	0.0	39.8	399.9	100.0	240	365	
Na+	0.28	0.00	7.14	114.1	97.4	2	78	
SO4-- corr	0.58	-0.02	3.65	232.7	97.4	1	78	
SO4--	0.61	0.04	3.68	242.2	97.4	0	78	

DE0008R SCHMUCKE GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.61	0.01	5.01	591.2	98.5	0	151	
Ca++	0.16	0.00	2.80	157.4	98.4	9	149	
Cl-	0.48	0.00	10.20	467.2	98.6	1	153	
Mg++	0.036	0.005	0.570	35.3	98.4	29	150	
NO3-	0.52	0.11	4.56	510.6	98.6	0	153	
pH	4.65	3.67	6.35	21869.6	98.9	0	164	
K+	0.08	0.00	1.61	74.2	98.4	14	149	
Precip	-	0.0	40.6	973.7	100.0	105	365	
Na+	0.23	0.00	4.40	222.3	98.4	8	149	
SO4-- corr	0.55	0.18	3.95	537.3	98.6	0	153	
SO4--	0.57	0.18	4.03	554.9	98.6	0	153	

DE0009R ZINGST GERMANY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.65	0.10	7.86	315.6	98.9	0	109	
Ca++	0.70	0.10	6.50	337.4	98.5	0	103	
Cl-	1.70	0.10	52.00	820.2	98.9	0	109	
Mg++	0.181	0.005	3.980	87.4	98.5	1	103	
NO3-	0.66	0.09	6.51	319.1	98.9	0	109	
pH	4.86	3.53	7.32	6645.1	99.3	0	115	
K+	0.13	0.00	2.44	63.8	98.5	4	103	
Precip	-	0.0	23.9	482.7	100.0	223	365	
Na+	0.84	0.00	24.42	405.6	98.5	1	103	
SO4-- corr	0.89	0.21	7.32	428.0	98.9	0	109	
SO4--	0.96	0.24	8.26	463.0	98.9	0	109	

DK0003R TANGE DENMARK

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.52	0.00	4.17	313.5	98.8	3	132	
Ca++	0.11	0.00	1.42	66.8	98.3	34	124	
Cl-	2.08	0.14	64.80	1251.1	99.7	25	150	
Mg++	0.130	0.000	4.380	78.5	97.2	38	119	
NO3-	0.44	0.00	4.45	261.6	99.6	2	149	
pH	4.70	4.00	6.59	11997.9	96.9	0	113	
K+	0.07	0.00	2.13	44.1	98.0	64	122	
Precip	-	0.0	33.6	601.5	100.0	174	365	
Na+	1.14	0.00	36.52	688.6	98.3	1	124	
SO4-- corr	0.50	0.00	3.04	301.9	99.7	1	150	
SO4--	0.59	0.03	3.71	355.1	99.7	1	150	

DK0005R KELDSNOR DENMARK

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.38	0.00	4.77	131.7	98.0	2	90	
Ca++	0.33	0.03	3.30	114.5	97.0	2	82	
Cl-	3.20	0.07	84.50	1117.8	99.0	4	107	
Mg++	0.194	0.010	2.190	68.0	97.0	12	82	
NO3-	0.44	0.03	17.30	155.0	99.1	0	107	
pH	4.79	3.89	7.50	5673.5	95.1	0	72	
K+	0.18	0.00	1.51	63.1	96.4	13	79	
Precip	-	0.0	22.4	349.6	76.2	126	278	
Na+	1.74	0.00	24.20	609.2	96.5	3	79	
SO4-- corr	0.56	0.08	12.86	196.5	99.3	0	108	
SO4--	0.70	0.13	16.80	245.0	99.3	0	108	

DK0008R ANHOLT DENMARK

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.53	0.12	1.88	316.7	99.9	0	41	W
Ca++	0.33	0.04	2.85	194.1	99.9	1	41	W
Cl-	7.04	0.70	81.00	4175.9	99.9	0	41	W
Mg++	0.511	0.050	5.640	303.2	99.9	0	41	W
NO3-	0.64	0.20	3.48	381.8	99.9	0	41	W
pH	4.47	2.00	6.62	20150.5	99.8	0	43	W
K+	0.20	0.03	2.59	118.1	99.9	1	41	W
Precip	-	0.0	65.2	593.1	99.7	17	62	W
Na+	4.22	0.00	47.80	2501.4	99.9	1	41	W
SO4-- corr	0.70	0.25	2.79	416.7	99.9	0	41	W
SO4-- corr	-	0.25	2.79	-	-	0	41	W
SO4--	1.04	0.39	5.20	620.1	99.9	0	41	W

EE0009R LAHEMAA ESTONIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	Samp flag
NH4+	0.14	0.00	0.90	39.3	86.1	10	75	
Ca++	0.85	0.00	10.30	247.5	89.0	6	105	
Cl-	0.86	0.20	7.80	250.1	94.9	0	111	
Mg++	0.094	0.005	1.700	27.4	94.5	2	110	
NO3-	0.32	0.01	3.44	94.0	84.3	11	104	
pH	4.96	3.82	9.02	3199.5	96.4	0	125	
K+	0.12	0.01	3.66	35.8	94.3	24	111	
Precip	-	0.0	14.9	289.8	99.2	234	362	
Na+	0.37	0.02	3.23	107.4	94.1	2	108	
SO4-- corr	0.85	0.00	7.59	246.1	94.9	0	111	
SO4--	0.88	0.05	7.70	254.3	94.9	0	111	

EE0011R VILSANDI ESTONIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.61	0.00	11.00	230.0	100.0	2	32	
Ca++	0.41	0.00	3.90	157.3	100.0	11	32	
Cl-	2.74	0.20	11.80	1039.0	100.0	0	32	
Mg++	0.210	0.030	0.900	79.5	100.0	0	32	
NO3-	0.37	0.01	2.21	140.6	100.0	5	32	
pH	5.06	4.14	7.33	3293.5	100.0	0	32	
K+	0.34	0.05	4.60	128.1	100.0	2	32	
Precip	-	0.0	36.6	379.0	100.0	333	365	
Na+	1.62	0.21	7.13	613.2	100.0	0	32	
SO4-- corr	0.63	0.19	3.47	237.4	100.0	0	32	
SO4--	0.74	0.22	3.57	278.7	100.0	0	32	

ES0001R TOLEDO SPAIN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.17	0.00	1.77	136.3	97.2	25	79	
I Ca++	0.41	0.04	6.62	331.7	95.8	0	77	
Cl-	0.85	0.06	4.14	693.1	99.4	0	85	
Mg++	0.069	0.010	0.600	56.7	95.8	0	77	
NO3-	0.20	0.00	2.44	161.3	99.4	5	85	
pH	5.42	4.51	7.71	3106.5	99.9	0	94	
I K+	0.09	0.03	0.90	72.1	95.8	37	77	
Precip	-	0.0	53.9	819.1	100.0	269	365	
Na+	0.35	0.03	2.31	283.6	95.8	1	77	
SO4-- corr	0.46	0.04	3.41	380.1	99.4	0	85	
SO4--	0.49	0.06	3.60	403.4	99.4	0	85	

ES0003R ROQUETAS SPAIN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.34	0.00	3.65	188.6	99.9	2	66	
I Ca++	2.58	0.17	34.00	1435.5	98.7	0	60	
Cl-	1.39	0.03	35.45	773.0	100.0	1	67	
Mg++	0.281	0.050	3.800	156.6	98.9	0	61	
NO3-	0.59	0.00	11.71	330.0	100.0	1	67	
pH	6.24	5.51	7.94	321.4	100.0	0	68	
I K+	0.23	0.03	13.60	129.2	98.9	9	61	
Precip	-	0.0	42.7	556.4	100.3	297	365	
Na+	0.81	0.06	18.80	452.0	98.9	0	61	
SO4-- corr	1.01	0.08	17.74	560.9	100.0	0	67	
SO4--	1.08	0.09	19.31	599.2	100.0	0	67	

ES0004R LOGRONO SPAIN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.74	0.00	6.31	409.8	100.0	1	67	
I Ca++	0.87	0.01	6.48	484.4	99.5	0	65	
Cl-	0.84	0.03	25.38	468.1	100.0	2	67	
Mg++	0.151	0.020	1.660	84.2	99.5	0	65	
NO3-	0.38	0.04	3.06	210.4	100.0	0	67	
pH	6.15	5.36	7.80	396.5	100.0	0	67	
I K+	0.20	0.03	2.18	112.2	99.5	16	65	
Precip	-	0.0	31.5	556.3	100.0	298	365	
Na+	0.42	0.05	19.20	231.5	99.5	0	65	
SO4-- corr	0.81	0.05	6.20	451.1	100.0	0	67	
SO4--	0.84	0.05	6.31	467.3	100.0	0	67	

ES0005R NOIA SPAIN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.10	0.00	4.31	293.8	99.1	51	127	
I Ca++	0.36	0.03	5.22	1085.3	99.3	0	127	
Cl-	4.80	0.16	80.55	14506.8	99.8	0	132	
Mg++	0.796	0.020	27.000	2406.7	99.3	0	127	
NO3-	0.19	0.00	9.25	569.7	99.8	17	132	
pH	5.46	4.15	7.32	10457.1	100.0	0	133	
I K+	0.19	0.03	2.80	579.6	99.3	15	127	
Precip	-	0.0	201.8	3024.1	100.0	233	365	
Na+	2.87	0.21	24.50	8664.2	99.3	0	127	
SO4-- corr	1.12	0.07	76.47	3385.0	99.8	0	132	
SO4--	1.33	0.14	76.76	4030.6	99.8	0	132	

ES0006R MAHON SPAIN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.35	0.00	5.39	96.9	76.9	15	45	
I Ca++	5.88	0.40	32.90	1605.0	80.3	0	45	
Cl-	109.22	2.76	641.00	29827.8	85.8	0	53	
Mg++	6.270	0.400	48.500	1712.2	80.3	0	45	
NO3-	1.61	0.06	17.52	438.6	82.8	0	52	
pH	6.56	5.78	7.95	75.6	100.0	0	61	
I K+	2.62	0.13	14.60	714.6	80.3	0	45	
Precip	-	0.0	81.2	273.1	100.0	325	365	
Na+	48.56	3.00	435.00	13261.1	80.3	0	45	
SO4-- corr	2.08	-0.28	11.93	567.8	85.8	2	53	
SO4--	6.73	0.63	38.30	1837.2	85.8	0	53	

ES0007R VIZNAR SPAIN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.11	0.00	1.10	98.9	99.2	40	79	
I Ca++	1.25	0.33	20.20	1153.7	98.0	0	74	
Cl-	0.92	0.16	15.97	845.0	99.6	0	83	
Mg++	0.249	0.100	1.970	228.8	98.0	0	74	
NO3-	0.30	0.00	8.02	279.0	99.6	5	83	
pH	6.37	5.77	8.21	393.2	100.0	0	85	
I K+	0.13	0.03	1.27	117.3	98.0	26	74	
Precip	-	0.0	49.8	920.0	100.0	280	365	
Na+	0.42	0.04	3.00	383.3	98.0	0	74	
SO4-- corr	0.50	0.01	5.64	463.8	99.6	1	83	
SO4--	0.54	0.03	5.84	497.9	99.6	1	83	

FI0004F AHTARI FINLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.12	0.00	1.43	70.3	98.9	5	153	
Ca++	0.06	0.00	1.16	37.2	98.9	2	153	
Cl-	0.18	0.02	2.09	105.7	98.9	0	153	
Mg++	0.019	0.002	0.233	11.1	98.9	9	153	
NO3-	0.19	0.00	2.20	114.2	98.9	2	153	
pH	4.71	3.89	6.43	11533.8	99.4	0	164	
K+	0.05	0.02	0.27	29.0	98.9	0	153	
Precip	-	0.0	27.1	531.0	100.0	186	365	
Precip off	-	0.0	27.8	587.8	100.0	175	365	
Na+	0.10	0.01	1.41	58.7	98.9	0	153	
SO4-- corr	0.25	0.00	1.85	150.0	98.9	1	153	
SO4--	0.26	0.01	1.87	154.7	98.9	1	153	

FI0009F UTO FINLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.41	0.00	3.29	251.8	88.6	4	95	
Ca++	0.30	0.03	9.03	184.6	88.6	0	95	
Cl-	5.51	0.13	70.56	3353.0	88.6	0	95	
Mg++	0.386	0.013	4.887	234.8	88.6	0	95	
NO3-	0.53	0.00	7.04	320.0	88.6	1	95	
pH	4.47	3.31	6.14	20515.8	90.2	0	104	
K+	0.24	0.03	2.17	147.3	88.6	0	95	
Precip	-	0.0	36.2	315.7	100.0	243	365	
Precip off	-	0.0	40.5	608.3	100.0	196	365	
Na+	2.99	0.06	36.43	1816.6	88.6	0	95	
SO4-- corr	0.58	0.03	9.82	351.6	88.6	0	95	
SO4--	0.82	0.07	9.90	501.4	88.6	0	95	

FI0017F VIROLAHTI II FINLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.33	0.00	2.29	187.9	97.8	1	123	
Ca++	0.27	0.01	6.96	151.2	97.8	0	123	
Cl-	0.46	0.02	4.82	257.1	97.8	0	123	
Mg++	0.054	0.002	0.438	30.2	97.8	3	123	
NO3-	0.35	0.00	3.04	196.5	97.8	1	123	
pH	4.67	3.76	6.75	12121.5	98.4	0	130	
K+	0.13	0.02	1.66	74.2	97.8	0	123	
Precip	-	0.0	33.8	466.9	100.0	222	365	
Precip off	-	0.0	37.0	563.3	100.0	203	365	
Na+	0.25	0.01	2.39	138.8	97.8	0	123	
SO4-- corr	0.54	0.04	5.16	302.2	97.8	0	123	
SO4--	0.56	0.04	5.18	313.8	97.8	0	123	

FI0022F OULANKA FINLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.06	0.00	0.73	36.3	98.4	5	160	
Ca++	0.04	0.00	1.62	19.8	98.4	9	160	
Cl-	0.18	0.00	3.28	99.9	98.4	6	162	
Mg++	0.014	0.002	0.232	7.9	98.4	18	160	
NO3-	0.12	0.01	0.86	70.3	98.4	0	162	
pH	4.75	4.02	6.09	10007.2	98.9	0	171	
K+	0.06	0.00	2.39	31.4	98.4	9	160	
Precip	-	0.0	23.6	461.4	100.0	190	365	
Precip off	-	0.0	25.9	564.3	100.0	151	365	
Na+	0.10	0.00	1.83	55.4	98.4	1	160	
SO4-- corr	0.19	0.01	1.86	105.1	98.4	0	162	
SO4--	0.19	0.03	1.88	109.2	98.4	0	162	

FR0003F LA CROUZILLE FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.34	0.01	4.95	294.0	91.1	4	111	
Ca++	0.24	0.01	6.98	206.2	91.1	4	111	
Cl-	1.21	0.03	18.42	1039.0	91.1	1	111	
Mg++	0.166	0.010	1.590	143.0	91.1	6	111	
NO3-	0.25	0.00	2.41	210.6	91.1	1	111	
pH	5.18	3.79	7.07	5687.9	96.1	0	127	
Q K+	0.08	0.00	1.18	72.4	91.1	14	111	
Precip	-	0.2	27.2	859.3	100.0	228	365	
Na+	0.77	0.02	10.76	661.7	91.1	0	111	
SO4-- corr	0.32	0.00	3.10	279.5	91.1	1	111	
SO4--	0.39	0.01	3.92	334.0	91.1	1	111	

FR0005F LA HAGUE FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.34	0.01	3.33	322.5	86.4	1	108	
Ca++	0.35	0.03	2.32	326.7	86.4	0	108	
Cl-	7.03	0.23	75.19	6640.4	86.4	0	108	
Mg++	0.532	0.010	6.700	501.9	86.4	1	108	
NO3-	0.28	0.03	4.01	266.0	86.4	0	108	
pH	4.98	3.74	6.73	9915.4	88.3	0	125	
Q K+	0.18	0.00	2.01	171.7	86.4	4	108	
Precip	-	0.2	37.4	943.9	100.0	210	365	
Na+	4.03	0.14	38.91	3798.8	86.4	0	108	
SO4-- corr	0.35	-0.04	3.77	332.7	86.4	1	108	
SO4--	0.69	0.17	5.12	649.2	86.4	0	108	

FR0008F DONON FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.32	0.00	2.49	480.0	98.2	4	151	
Ca++	0.17	0.00	17.96	251.7	97.7	27	150	
Cl-	0.34	0.00	3.23	508.1	98.2	6	151	
Mg++	0.038	0.000	0.370	56.7	98.2	61	151	
NO3-	0.26	0.00	1.56	388.6	98.2	1	151	
pH	4.87	4.07	7.34	20285.1	99.0	0	158	
Q K+	0.03	0.00	0.37	50.8	98.2	45	151	
Precip	-	0.0	74.0	1492.7	100.0	200	365	
Na+	0.20	0.00	1.91	300.1	98.2	12	151	
SO4-- corr	0.33	0.00	1.52	485.9	98.2	1	151	
SO4--	0.34	0.00	1.61	508.9	98.2	1	151	

FR0009F REVIN FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.43	0.01	5.13	519.8	93.0	2	116	
Ca++	0.25	0.01	7.87	297.0	93.0	3	116	
Cl-	0.77	0.03	11.20	921.9	93.1	4	117	
Mg++	0.077	0.010	0.840	92.4	93.1	27	117	
NO3-	0.30	0.04	2.44	360.1	93.1	0	117	
pH	4.95	4.14	7.27	13531.4	96.9	0	131	
Q K+	0.05	0.00	1.71	54.8	93.1	31	117	
Precip	-	0.2	44.5	1196.4	100.0	216	365	
Na+	0.45	0.02	6.05	539.5	93.1	6	117	
SO4-- corr	0.39	0.07	3.81	469.8	93.1	0	117	
SO4--	0.43	0.07	4.12	512.6	93.1	0	117	

FR0010F MORVAN FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.28	0.03	3.29	329.8	90.4	0	112	
Ca++	0.19	0.01	1.62	227.6	90.4	1	112	
Cl-	0.55	0.03	6.10	661.2	90.4	3	112	
Mg++	0.063	0.010	0.440	76.0	90.4	22	112	
NO3-	0.19	0.04	1.54	234.5	90.4	0	112	
pH	5.12	3.84	7.32	9110.4	92.0	0	126	
Q K+	0.08	0.00	1.65	98.5	90.4	24	112	
Precip	-	0.2	33.0	1201.2	100.0	223	365	
Na+	0.33	0.02	3.28	396.3	90.4	4	112	
SO4-- corr	0.28	0.03	2.10	329.8	90.4	0	112	
SO4--	0.30	0.03	2.12	361.8	90.4	0	112	

FR0011F BONNEVAUX FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.25	0.01	1.24	416.6	85.8	3	125	
Ca++	0.31	0.01	8.46	522.5	85.8	5	125	
Cl-	0.35	0.03	4.02	590.1	85.8	5	125	
Mg++	0.058	0.010	0.500	96.1	85.8	37	125	
NO3-	0.20	0.00	1.39	333.0	85.8	1	125	
pH	5.13	4.21	7.53	12280.3	87.3	0	134	
Q K+	0.05	0.00	2.43	85.1	85.8	41	125	
Precip	-	0.2	75.0	1671.2	100.0	204	365	
Na+	0.20	0.02	2.30	334.3	85.8	17	125	
SO4-- corr	0.26	0.05	1.36	441.5	85.8	0	125	
SO4--	0.28	0.06	1.37	466.9	85.8	0	125	

FR0012F IRATY FRANCE

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.24	0.01	1.90	276.6	84.7	3	87	
Ca++	0.67	0.01	16.41	774.1	84.5	2	86	
Cl-	0.59	0.03	5.47	691.2	84.7	3	87	
Mg++	0.081	0.010	0.570	94.7	84.7	11	87	
NO3-	0.18	0.03	1.48	207.1	84.7	0	87	
pH	5.17	4.31	7.18	7943.8	85.8	0	93	
Q K+	0.05	0.00	1.29	59.5	84.7	34	87	
Precip	-	0.2	83.0	1164.2	100.0	242	365	
Na+	0.37	0.02	3.83	433.6	84.7	2	87	
SO4-- corr	0.36	0.03	2.91	424.3	84.7	0	87	
SO4--	0.39	0.03	2.95	459.2	84.7	0	87	

GB0002R ESKDALEMUIR UNITED KINGDOM

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
Q NH4+	0.25	0.01	2.51	317.9	99.9	5	191	
Ca++	0.16	0.03	1.69	203.0	99.9	20	191	
Cl-	2.31	0.21	39.41	2959.4	99.9	0	191	
Mg++	0.197	0.025	3.070	252.0	99.9	34	191	
NO3-	0.24	0.01	2.41	310.3	99.9	2	191	
pH	4.71	3.81	6.35	24811.8	99.9	0	191	
K+	0.06	0.03	1.27	76.0	99.9	90	191	
Precip	-	0.0	31.5	1279.8	98.4	157	359	
Na+	1.28	0.01	20.38	1643.6	99.9	1	191	
SO4-- corr	0.38	0.00	3.36	489.5	99.9	1	191	
SO4--	0.49	0.02	3.89	626.4	99.9	1	191	

GB0006R LOUGH NAVAR UNITED KINGDOM

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
Q NH4+	0.25	0.04	3.50	298.7	99.7	26	172	
Ca++	0.42	0.06	3.26	496.8	99.7	0	172	
Cl-	4.71	0.03	75.51	5616.6	99.4	1	171	
Mg++	0.440	0.025	7.273	525.2	99.7	2	172	
NO3-	0.18	0.03	2.88	215.1	99.7	23	172	
pH	5.24	3.93	6.90	6841.6	99.7	0	172	
K+	0.13	0.03	1.97	150.1	99.7	46	172	
Precip	-	0.0	31.1	1193.1	91.2	152	333	
Na+	2.63	0.05	46.68	3136.1	99.4	3	171	
SO4-- corr	0.24	-0.46	3.48	290.8	99.7	1	172	
SO4--	0.46	0.07	3.73	551.7	99.7	0	172	

GB0013R YARNER WOOD UNITED KINGDOM

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
Q NH4+	0.39	0.01	3.91	293.8	100.0	5	91	
Ca++	0.29	0.03	11.57	216.6	100.0	3	91	
Cl-	4.02	0.22	29.21	3007.8	100.0	0	91	
Mg++	0.390	0.025	2.269	292.3	100.0	6	91	
NO3-	0.35	0.01	3.07	259.1	100.0	1	91	
pH	4.81	3.86	7.04	11621.0	100.0	0	91	
K+	0.10	0.03	1.73	72.0	100.0	29	91	
Precip	-	0.0	31.3	748.9	72.1	167	263	
Na+	2.34	0.01	16.39	1749.2	100.0	2	91	
SO4-- corr	0.41	0.06	2.94	306.0	100.0	0	91	
SO4--	0.60	0.14	3.68	451.7	100.0	0	91	

GB0014R HIGH MUFFLES UNITED KINGDOM

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
Q NH4+	0.53	0.01	3.50	361.3	99.6	2	140	
Ca++	0.22	0.03	2.14	151.3	99.6	4	140	
Cl-	2.66	0.22	61.12	1813.1	96.5	0	134	
Mg++	0.201	0.025	4.056	136.7	99.6	25	140	
NO3-	0.43	0.05	3.58	294.5	99.6	0	140	
pH	4.49	3.43	6.72	21738.1	99.6	0	140	
K+	0.08	0.03	1.81	53.0	99.6	38	140	
Precip	-	0.0	31.2	680.3	100.0	213	365	
Na+	1.42	0.01	35.07	965.9	96.5	3	134	
SO4-- corr	0.68	-0.03	5.63	463.5	99.6	1	140	
SO4--	0.80	0.02	5.93	541.7	99.6	1	140	

GB0015R STRATHVAICH DAM UNITED KINGDOM

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
Q NH4+	0.13	0.01	3.96	59.9	98.8	45	112	
Ca++	0.22	0.03	1.83	102.5	98.8	4	112	
Cl-	4.01	0.28	47.00	1835.9	97.5	0	111	
Mg++	0.357	0.025	3.388	163.5	98.8	13	112	
NO3-	0.14	0.01	3.72	63.3	98.8	13	112	
pH	5.00	3.77	7.09	4593.0	98.8	0	112	
K+	0.08	0.03	2.78	37.4	98.8	53	112	
Precip	-	0.0	24.9	457.7	91.5	208	334	
Na+	2.24	0.07	26.31	1025.2	97.5	0	111	
SO4-- corr	0.22	-0.02	4.44	103.0	98.8	3	112	
SO4--	0.41	0.02	4.91	187.6	98.8	1	112	

HU0002R K-PUSZTA HUNGARY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
H+	-28.	-435.	14.	-13158.	94.6	42	47	
NH4+	0.76	0.02	3.39	352.4	98.4	2	59	
I Ca++	0.96	0.08	6.45	442.9	97.6	0	56	
I Cl-	1.15	0.53	7.07	534.2	98.7	0	60	
Mg++	0.377	0.090	2.430	174.3	91.8	0	57	
NO3-	0.46	0.01	3.59	211.1	98.7	1	60	
I pH	5.94	4.00	7.33	531.5	97.2	0	59	
I K+	0.17	0.03	1.44	77.0	97.6	8	56	
Precip	-	0.0	34.2	462.8	100.0	303	365	
I Na+	0.67	0.26	4.32	309.4	97.6	0	56	
SO4-- corr	1.16	0.27	4.60	534.8	98.7	0	60	
SO4--	1.22	0.31	4.87	566.3	98.7	0	60	

IE0001R VALENTIA OBS. IRELAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.33	0.01	62.57	468.8	97.9	98	193	
Ca++	0.47	0.01	8.88	661.4	97.9	6	193	
Cl-	16.33	0.19	255.98	23087.9	97.9	0	193	
Q Mg++	1.344	0.010	29.829	1901.4	97.9	2	193	
NO3-	0.08	0.01	3.85	117.6	97.9	98	193	
Q pH	4.96	3.73	7.70	15562.0	97.9	0	193	
Q K+	0.47	0.01	17.70	657.2	97.9	8	193	
Precip off	-	0.0	36.1	1414.2	100.0	119	365	
Na+	11.52	0.14	264.27	16299.0	97.9	0	193	
SO4-- corr	0.00	-10.15	9.94	-1.0	97.9	23	193	
SO4--	0.93	0.07	10.99	1309.6	97.9	0	193	

IE0002R TURLOUGH HILL IRELAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.37	0.00	4.74	473.9	99.2	2	166	
Ca++	0.30	0.00	8.28	378.7	98.3	1	168	
Cl-	2.57	0.00	108.29	3295.2	98.2	1	165	
Mg++	0.224	0.000	9.480	287.1	98.3	1	168	
NO3-	0.25	0.00	22.85	313.9	99.2	4	166	
pH	5.02	3.90	7.53	12294.5	95.3	0	143	
I K+	0.10	0.00	2.17	125.8	98.3	7	168	
Precip	-	0.2	24.6	1281.7	100.0	185	365	
Na+	1.57	0.06	72.46	2014.3	98.3	0	168	
SO4-- corr	0.27	-0.14	5.59	350.9	98.2	4	165	
SO4--	0.40	0.00	10.03	512.5	98.2	4	165	

IE0003R THE BURREN IRELAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.32	0.00	3.90	407.1	100.0	8	146	
Ca++	0.31	0.01	7.01	391.6	100.0	0	146	
Cl-	8.42	0.10	256.70	10640.6	100.0	0	146	
Mg++	0.594	0.000	17.310	750.4	100.0	2	146	
NO3-	0.19	-0.02	4.33	245.7	100.0	6	146	
pH	5.25	3.70	6.70	7176.8	99.9	0	142	
K+	0.09	0.00	2.62	113.5	100.0	15	146	
Precip	-	0.2	41.0	1264.0	100.0	219	365	
Na+	4.95	0.09	145.21	6253.9	100.0	0	146	
SO4-- corr	0.26	-0.78	4.97	327.6	100.0	13	146	
SO4--	0.66	0.00	12.97	833.2	100.0	7	146	

IE0004R RIDGE OF CAPARD IRELAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.51	0.00	7.09	701.7	100.0	1	161	
Ca++	0.17	0.00	5.77	231.5	100.0	2	161	
Cl-	2.00	0.00	57.40	2724.0	100.0	1	161	
Mg++	0.153	0.009	3.715	208.9	100.0	0	161	
NO3-	0.23	0.00	4.92	313.9	100.0	5	161	
pH	5.11	3.90	6.80	10644.3	100.0	0	160	
K+	0.03	0.00	0.78	36.2	100.0	20	161	
Precip	-	0.3	35.4	1361.4	100.0	204	365	
Na+	1.27	0.06	31.92	1729.0	100.0	0	161	
SO4--	0.38	0.00	5.84	521.3	100.0	3	161	

IS0002R IRAFOSS ICELAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
pH	5.55	4.20	7.40	4538.4	100.0	0	194	
Precip	-	0.1	68.4	1629.7	100.0	171	365	
Na+	3.38	0.10	104.00	5502.9	100.0	0	194	
SO4-- corr	0.15	-0.73	5.38	239.6	100.0	23	194	
SO4--	0.43	0.05	9.20	701.4	100.0	5	194	

IT0001R MONTELIBRETTI ITALY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.35	0.09	2.29	286.3	100.0	0	27	
I Ca++	1.78	0.34	14.75	1459.3	100.0	0	27	
Cl-	2.47	0.08	20.30	2020.0	100.0	0	27	
Mg++	0.247	0.030	1.423	201.9	100.0	0	27	
NO3-	0.43	0.14	4.58	350.3	100.0	0	27	
I pH	4.34	3.76	7.16	37135.7	100.0	0	27	
K+	0.60	0.05	15.90	491.6	100.0	0	27	
Precip	-	0.0	95.5	818.7	100.0	338	365	
Na+	1.27	0.12	9.08	1037.8	100.0	0	27	
SO4-- corr	0.88	0.12	5.34	721.1	100.0	0	27	
SO4--	0.99	0.13	6.10	808.0	100.0	0	27	

IT0004R ISPRA ITALY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.71	0.05	8.45	870.0	100.0	0	79	
Ca++	0.28	0.04	4.17	350.7	100.0	0	79	
Cl-	0.38	0.03	5.04	463.6	100.0	0	79	
Mg++	0.047	0.004	0.709	57.7	100.0	0	79	
NO3-	0.54	0.09	5.77	670.3	100.0	0	79	
pH	4.59	3.50	6.08	31952.8	100.0	0	79	
K+	0.08	0.01	2.64	95.1	100.0	0	79	
Precip	-	1.0	86.5	1232.1	100.0	286	365	
Na+	0.20	0.01	3.62	250.1	100.0	0	79	
SO4-- corr	0.69	0.09	6.74	845.2	100.0	0	79	
SO4--	0.70	0.09	6.85	866.2	100.0	0	79	

LT0015R PREILA LITHUANIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.47	0.03	6.89	213.7	100.0	0	40	W
Ca++	0.55	0.10	3.10	254.7	95.5	0	39	W
Cl-	4.34	0.29	43.68	1995.4	100.0	0	40	W
NO3-	0.37	0.10	2.51	169.1	100.0	0	40	W
pH	5.17	4.00	6.43	3080.6	100.0	0	50	W
K+	0.20	0.02	1.20	93.4	98.3	0	39	W
Precip	-	0.7	59.6	459.4	100.0	8	48	W
Na+	2.65	0.21	25.00	1218.3	100.0	0	40	W
SO4-- corr	0.48	-0.09	2.56	221.7	100.0	1	40	W
SO4--	0.70	0.18	3.27	323.7	100.0	0	40	W

LV0010R RUCAVA LATVIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.30	0.01	3.82	218.9	99.6	0	133	
Ca++	0.38	0.08	2.94	273.3	95.6	0	112	
Q Cl$^-$	1.75	0.40	6.80	1271.1	100.0	0	12	M
Mg++	0.134	0.010	2.910	97.0	93.2	0	110	
Q NO3-	0.33	0.01	1.99	240.0	99.6	0	133	
pH	4.71	3.74	7.53	14082.9	100.0	0	138	
K+	0.17	0.03	1.95	124.5	99.0	0	128	
Precip	-	0.0	29.0	726.3	100.0	227	364	
Na+	0.34	0.02	9.04	244.9	100.0	0	137	
I SO4-- corr	0.40	-0.22	2.53	291.6	100.0	7	137	
I SO4--	0.43	0.02	2.53	312.2	100.0	0	137	

LV0016R ZOSENI LATVIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.43	0.03	2.11	342.6	97.4	0	149	
Ca++	1.12	0.23	7.75	898.6	84.3	0	111	
Q Cl-	1.67	0.26	9.80	1337.2	90.6	0	140	
Mg++	0.355	0.040	1.560	284.7	84.1	0	115	
Q NO3-	0.60	0.14	2.10	482.3	90.2	0	138	
pH	5.48	4.00	6.80	2646.9	100.0	0	186	
K+	0.33	0.05	4.90	261.8	85.1	0	117	
Precip	-	0.0	34.4	802.7	100.0	176	364	
Na+	0.44	0.05	5.46	351.8	85.8	0	120	
I SO4-- corr	0.74	-0.11	2.78	591.5	90.3	1	139	
I SO4--	0.79	0.13	2.90	635.0	90.3	0	139	

NL0009R KOLLUMERWAARD NETHERLANDS

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
H+	-7.	-220.	83.	-3130.	98.2	79	103	
NH4+	1.00	0.15	5.00	459.4	96.2	0	84	
Ca++	0.34	0.04	1.65	157.1	94.7	0	77	
Cl-	3.03	0.05	29.80	1392.0	97.7	1	94	
Mg++	0.209	0.018	1.400	96.0	94.7	6	77	
NO3-	0.54	0.07	2.93	246.9	97.7	0	94	
pH	5.23	4.14	7.77	2724.9	98.6	0	105	
K+	0.26	0.02	2.71	118.0	94.7	2	77	
Precip	-	0.0	38.4	458.9	92.3	187	337	
Na+	1.69	0.04	11.54	774.8	94.7	0	77	
SO4-- corr	0.72	0.11	3.04	330.0	97.7	0	94	
SO4--	0.86	0.24	3.09	396.2	97.7	0	94	

NO0001R BIRKENES NORWAY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.45	0.00	2.94	559.8	98.4	3	125	
Ca++	0.10	0.00	1.13	122.6	98.4	6	125	
Cl-	2.06	0.08	21.91	2563.8	98.4	0	125	
Mg++	0.129	0.005	1.237	160.1	98.4	7	125	
NO3-	0.50	0.00	3.32	617.2	98.4	1	125	
pH	4.50	3.56	6.81	39647.0	99.6	0	149	
K+	0.09	0.00	0.72	114.5	98.4	1	125	
Precip	-	0.0	64.3	1243.3	100.0	191	365	
Na+	1.08	0.04	11.10	1346.5	98.4	0	125	
SO4-- corr	0.52	0.00	2.90	653.3	98.4	1	125	
SO4--	0.61	0.00	3.15	760.9	98.4	1	125	

NO0008R SKREAADALEN NORWAY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.29	0.02	2.63	609.6	98.5	0	159	
Ca++	0.21	0.02	1.27	426.8	98.6	0	160	
Cl-	5.43	0.16	64.36	11252.1	99.2	0	162	
Mg++	0.329	0.005	3.394	682.4	98.7	4	161	
NO3-	0.23	0.00	2.37	471.8	99.1	2	161	
pH	4.92	3.89	6.68	25062.3	98.8	0	171	
K+	0.25	0.05	1.37	521.4	98.3	0	158	
Precip	-	0.0	83.6	2072.1	100.0	173	365	
Na+	2.88	0.10	35.83	5976.5	99.2	0	162	
SO4-- corr	0.27	-0.19	4.26	563.4	99.1	10	161	
SO4--	0.49	0.00	4.35	1005.2	99.1	3	161	

NO0015R TUSTERVATN NORWAY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.19	0.01	1.53	289.4	67.8	0	144	
Ca++	0.15	0.00	0.85	231.1	67.6	1	144	
Cl-	3.57	0.04	43.49	5459.9	68.0	0	145	
Mg++	0.234	0.005	2.368	358.0	68.0	10	145	
NO3-	0.08	0.00	0.86	114.1	68.0	10	145	
pH	5.31	4.16	6.91	7561.5	69.0	0	167	
K+	0.16	0.02	1.19	241.1	68.0	0	145	
Precip	-	0.0	47.5	1075.6	93.2	129	340	
Na+	1.77	0.02	21.24	2709.7	68.0	0	145	
SO4-- corr	0.10	-0.02	0.90	149.4	68.0	11	145	
SO4--	0.24	0.00	1.75	367.8	68.0	7	145	

NO0039R KAARVATN NORWAY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.11	0.00	1.98	209.0	99.2	1	161	
Ca++	0.12	0.00	1.18	215.4	98.8	12	161	
Cl-	3.52	0.04	28.28	6486.0	99.3	0	163	
Mg++	0.229	0.005	1.810	421.1	99.3	14	163	
NO3-	0.06	0.00	1.81	109.3	99.1	19	161	
pH	5.22	3.95	6.25	11061.0	99.2	0	173	
K+	0.12	0.00	0.82	225.2	99.2	7	161	
Precip	-	0.0	69.4	1841.8	100.0	177	365	
Na+	1.80	0.02	14.49	3307.7	99.3	0	163	
SO4-- corr	0.10	-0.05	3.21	178.7	99.3	14	162	
SO4--	0.24	0.00	3.23	447.2	99.3	7	162	

NO0041R OSEN NORWAY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.18	0.01	1.34	125.8	94.8	0	80	
Ca++	0.10	0.00	0.74	67.8	96.9	6	81	
Cl-	0.19	0.03	1.11	136.0	97.2	0	82	
Mg++	0.021	0.005	0.200	15.2	97.2	28	82	
NO3-	0.20	0.00	0.78	138.7	97.2	2	82	
pH	4.82	4.22	6.56	10599.6	98.0	0	88	
K+	0.07	0.00	1.01	52.8	94.5	3	79	
Precip	-	0.0	44.6	708.6	100.0	270	365	
Na+	0.10	0.00	0.60	68.5	97.2	1	82	
SO4-- corr	0.23	0.00	1.07	159.9	97.2	1	82	
SO4--	0.23	0.00	1.10	164.5	97.2	1	82	

NO0055R KARASJOK NORWAY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.12	0.02	0.42	26.7	81.0	0	57	
Ca++	0.10	0.00	0.83	21.2	81.0	1	57	
Cl-	0.74	0.10	7.80	158.4	81.0	0	57	
Mg++	0.058	0.005	0.463	12.3	81.0	8	57	
NO3-	0.11	0.01	0.59	23.6	81.0	0	57	
pH	5.03	3.89	6.77	2004.2	91.9	0	95	
K+	0.17	0.03	0.88	36.3	81.0	0	57	
Precip	-	0.0	13.1	213.5	97.8	195	357	
Na+	0.42	0.06	3.35	89.7	81.0	0	57	
SO4-- corr	0.16	-0.01	0.78	33.0	81.0	3	57	
SO4--	0.18	0.00	0.97	39.2	81.0	2	57	

PL0002R JARCZEW POLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.66	0.12	16.76	407.9	99.1	0	155	
Ca++	0.23	0.05	3.47	145.0	97.8	0	152	
Cl-	0.47	0.07	19.31	286.7	99.1	0	159	
Mg++	0.038	0.010	0.760	23.4	97.8	0	152	
NO3-	0.42	0.08	8.36	258.0	99.1	0	159	
pH	4.62	3.00	7.38	14728.2	99.1	0	154	
K+	0.07	0.01	1.58	45.7	97.8	0	152	
Precip	-	0.0	61.6	616.4	100.0	173	365	
Na+	0.17	0.02	3.48	105.5	97.8	0	152	
SO4-- corr	0.85	0.15	18.69	526.0	99.1	0	159	
SO4--	0.87	0.15	18.87	535.3	99.1	0	159	

PL0003R SNIEZKA POLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.57	0.02	9.12	728.1	98.6	0	211	
Ca++	0.39	0.02	13.73	497.2	98.2	0	204	
Cl-	0.99	0.04	22.12	1257.0	98.8	0	212	
Mg++	0.100	0.010	1.830	126.0	98.2	0	204	
NO3-	0.68	0.10	9.03	865.6	98.8	0	212	
pH	4.27	3.50	6.24	68291.3	98.6	0	208	
K+	0.23	0.04	5.58	288.1	98.2	0	204	
Precip	-	0.0	107.7	1265.9	100.0	134	365	
Na+	0.62	0.05	17.45	786.9	98.2	0	204	
SO4-- corr	1.16	0.19	15.39	1468.5	98.8	0	212	
SO4--	1.21	0.20	15.65	1531.3	98.8	0	212	

PL0004R LEBA POLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.45	0.02	5.85	286.9	97.2	0	136	
Ca++	0.19	0.03	2.68	122.8	97.2	0	136	
Cl-	1.67	0.17	30.59	1062.6	97.2	0	136	
Mg++	0.124	0.010	2.310	79.1	97.2	0	136	
NO3-	0.44	0.08	8.21	278.9	97.2	0	136	
pH	4.61	3.37	7.14	15605.6	97.2	0	136	
K+	0.07	0.01	1.05	42.4	97.2	0	136	
Precip	-	0.0	24.4	635.9	100.0	186	365	
Na+	0.92	0.04	17.24	584.5	97.2	0	136	
SO4-- corr	0.56	0.06	7.04	354.8	97.2	0	136	
SO4--	0.63	0.10	7.29	402.3	97.2	0	136	

PL0005R DIABLA GORA POLAND

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.67	0.01	15.10	406.1	95.1	0	171	
Ca++	0.28	0.00	3.20	174.1	94.5	6	136	
Cl-	0.71	0.10	10.50	435.9	95.8	0	174	
Mg++	0.066	0.003	0.486	40.6	94.5	0	136	
NO3-	0.50	0.07	9.30	306.8	96.3	0	179	
pH	4.78	3.43	7.03	10228.0	99.2	0	178	
K+	0.17	0.02	2.17	105.0	94.5	0	136	
Precip	-	0.0	32.3	606.2	100.0	175	365	
Precip off	-	0.0	32.0	611.0	100.0	173	365	
Na+	0.28	0.00	3.96	168.6	94.3	1	136	
SO4-- corr	0.59	0.12	5.68	358.6	96.2	0	177	
SO4--	0.61	0.12	5.80	375.1	96.3	0	180	

PT0001F BRAGANCA PORTUGAL

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.16	0.01	1.92	131.3	100.0	24	48	
Ca++	0.43	0.05	6.40	346.2	100.0	16	48	
Cl-	0.40	0.00	3.10	323.1	100.0	6	48	
Mg++	0.067	0.015	0.920	53.5	100.0	21	48	
NO3-	0.15	0.01	1.44	119.3	100.0	7	48	
pH	5.32	4.11	7.39	3780.8	100.0	0	48	
K+	0.12	0.03	1.39	93.5	100.0	26	48	
Precip off	-	5.6	46.2	798.7	100.0	317	365	
Na+	0.22	0.01	2.93	179.9	100.0	15	48	
SO4-- corr	0.25	0.00	2.61	199.6	100.0	2	48	
SO4--	0.27	0.02	2.65	212.8	100.0	2	48	

PT0003F V. DO CASTELO PORTUGAL

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.13	0.01	1.07	200.6	90.7	15	75	
Ca++	0.40	0.05	8.50	606.5	98.5	6	84	
Cl-	4.83	0.40	20.70	7289.2	95.5	0	79	
Mg++	0.339	0.015	2.430	512.1	98.5	5	84	
NO3-	0.15	0.01	1.07	227.8	90.7	3	75	
pH	5.23	4.32	7.83	8978.1	90.7	0	75	
K+	0.14	0.04	2.40	204.6	98.5	24	84	
Precip off	-	5.8	75.2	1509.8	100.0	279	365	
Na+	2.87	0.19	12.07	4339.6	98.5	0	84	
SO4-- corr	0.30	0.04	1.87	459.1	95.5	0	79	
SO4--	0.52	0.11	1.98	788.8	98.5	0	84	

PT0004F MONTE VELHO PORTUGAL

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.07	0.01	1.26	58.5	100.0	35	46	
Ca++	0.33	0.05	3.60	262.5	100.0	4	46	
Cl-	5.56	0.50	33.20	4411.8	100.0	0	46	
Mg++	0.363	0.015	1.980	288.1	100.0	2	46	
NO3-	0.13	0.01	1.20	102.2	100.0	5	46	
pH	4.78	4.01	6.67	13186.6	100.0	0	46	
K+	0.11	0.03	0.63	88.0	100.0	13	46	
Precip off	-	4.8	92.5	793.9	100.0	319	365	
Na+	2.99	0.01	16.61	2370.6	100.0	1	46	
SO4-- corr	0.39	-0.03	2.41	312.0	100.0	1	46	
SO4--	0.63	0.13	2.84	500.1	100.0	0	46	

RU0001R JANISKOSKI RUSSIAN FEDERATION

January 1997 - December 1997
+

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.05	0.00	0.62	19.6	100.0	32	67	
Q Ca++	0.17	0.00	0.50	62.4	100.0	5	67	
Cl-	0.75	0.13	3.49	273.8	100.0	0	67	
Mg++	0.034	0.000	0.323	12.5	100.0	4	67	
NO3-	0.09	0.00	0.74	33.8	100.0	22	67	
pH	4.89	4.33	6.38	4675.0	100.0	0	67	
I K+	0.27	0.00	1.43	97.6	100.0	6	67	
Precip	-	0.0	43.3	365.9	100.0	298	365	
Na+	0.43	0.04	2.08	155.4	100.0	0	67	
SO4-- corr	0.35	0.06	1.12	127.7	100.0	0	67	
SO4--	0.37	0.08	1.15	135.2	100.0	0	67	

RU0013R PINEGA RUSSIAN FEDERATION

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.52	0.00	6.05	202.5	100.0	5	131	
Q Ca++	0.35	0.01	2.40	134.6	99.9	1	130	
Cl-	1.09	0.09	23.86	421.7	100.0	0	131	
Mg++	0.103	0.007	0.870	39.9	100.0	0	130	
NO3-	0.23	0.00	1.29	91.1	100.0	3	131	
pH	5.39	4.51	7.53	1584.6	100.0	0	130	
I K+	0.44	0.00	7.00	169.4	100.0	6	131	
Precip	-	0.0	30.1	388.6	100.0	234	365	
Na+	0.62	0.10	17.40	239.9	100.0	0	131	
SO4-- corr	0.57	0.04	2.81	220.9	100.0	0	131	
SO4--	0.60	0.07	2.89	234.5	100.0	0	131	

RU0016R SHEPELJOVO RUSSIAN FEDERATION

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.51	0.00	12.47	276.4	100.0	26	105	
Q Ca++	0.96	0.10	10.68	523.6	100.0	0	105	
Cl-	5.45	0.30	118.40	2971.8	100.0	0	105	
Mg++	0.359	0.012	3.476	196.2	100.0	0	105	
NO3-	0.32	0.00	4.19	177.4	100.0	15	105	
pH	5.11	4.34	7.42	4266.1	100.0	0	105	
I K+	0.49	0.00	4.30	265.1	100.0	3	105	
Precip	-	0.0	39.4	545.8	100.0	260	365	
Na+	2.99	0.19	75.86	1630.6	100.0	0	105	
SO4-- corr	0.81	0.10	6.70	443.6	100.0	0	105	
SO4--	1.01	0.14	8.52	554.2	100.0	0	105	

SE0002F RORVIK SWEDEN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.58	0.00	3.65	339.3	99.9	1	124	
Ca++	0.24	0.04	2.45	142.5	99.9	0	124	
Cl-	2.85	0.12	54.12	1664.5	99.9	0	124	
Mg++	0.230	0.030	4.450	134.4	99.9	0	124	
NO3-	0.62	0.00	3.36	359.9	99.9	1	124	
pH	4.48	3.78	6.53	19244.6	100.0	0	130	
K+	0.16	0.02	3.40	95.4	99.9	0	124	
Precip	-	0.0	27.1	584.1	100.0	230	365	
Na+	1.68	0.01	35.95	978.9	99.8	0	123	
SO4-- corr	0.63	0.07	4.72	367.7	99.9	0	124	
SO4--	0.77	0.08	4.83	447.6	99.9	0	124	

SE0005F BREDKALEN SWEDEN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.07	0.01	0.43	31.3	99.9	0	49	w
Ca++	0.08	0.00	0.62	33.4	99.9	1	49	w
Cl-	0.18	0.00	11.01	76.9	99.9	6	49	w
Mg++	0.031	0.010	0.650	13.4	99.9	0	49	w
NO3-	0.11	0.02	0.57	47.6	99.9	0	49	w
pH	4.97	4.00	6.32	4602.9	100.0	0	54	w
K+	0.05	0.01	0.36	23.1	99.9	0	49	w
Precip	-	0.0	64.2	430.7	100.0	10	62	w
Na+	0.12	0.01	7.41	51.5	99.9	0	49	w
SO4-- corr	0.16	0.03	0.71	70.3	99.9	0	49	w
SO4--	0.18	0.04	0.73	75.7	99.9	0	49	w

SE0011F VAVIHILL SWEDEN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.71	0.17	4.83	495.3	100.0	0	48	w
Ca++	0.23	0.03	2.93	158.9	100.0	0	49	w
Cl-	2.26	0.11	31.94	1575.3	100.0	0	49	w
Mg++	0.176	0.020	1.770	122.4	100.0	0	49	w
NO3-	0.58	0.19	3.50	405.6	100.0	0	49	w
pH	4.63	3.95	6.71	16477.4	100.0	0	51	w
K+	0.15	0.04	0.78	107.2	100.0	0	49	w
Precip	-	0.0	80.5	696.6	100.0	13	62	w
Na+	1.27	0.06	19.73	884.9	100.0	0	49	w
SO4-- corr	0.62	0.25	3.95	432.5	100.0	0	49	w
SO4--	0.73	0.29	4.16	505.8	100.0	0	49	w

SE0012F ASPVRETEN SWEDEN

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.33	0.01	2.28	145.6	99.9	0	44	w
Ca++	0.22	0.05	1.75	94.3	99.9	0	44	w
Cl-	0.58	0.04	4.95	254.8	99.9	0	44	w
Mg++	0.061	0.010	0.380	26.6	99.9	0	44	w
NO3-	0.38	0.06	2.22	165.8	99.9	0	44	w
pH	4.55	3.97	6.28	12342.5	100.0	0	47	w
K+	0.09	0.03	0.31	36.9	99.9	0	44	w
Precip	-	0.0	56.6	436.6	99.7	14	61	w
Na+	0.26	0.01	3.21	112.7	99.9	0	44	w
SO4-- corr	0.52	0.05	2.20	226.4	99.9	0	44	w
SO4--	0.54	0.06	2.21	236.4	99.9	0	44	w

SK0002R CHOPOK SLOVAKIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.58	0.00	2.78	575.7	90.4	1	141	
Ca++	0.39	0.06	4.47	386.6	90.4	0	141	
Cl-	0.42	0.08	2.50	413.1	91.3	0	143	
Mg++	0.059	0.006	0.534	58.8	90.4	0	141	
NO3-	0.38	0.04	2.33	375.1	91.3	0	143	
Q pH	4.43	3.75	6.62	36990.0	91.3	0	143	
K+	0.23	0.02	2.17	228.7	90.4	0	141	
Precip	-	0.1	76.8	993.0	99.7	158	364	
Na+	0.25	0.03	1.68	253.4	90.4	0	141	
SO4-- corr	0.95	0.16	5.78	942.0	91.3	0	143	
SO4--	0.97	0.18	5.87	961.3	91.3	0	143	

SK0004R STARA LESNA SLOVAKIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.56	0.01	2.48	413.0	88.6	0	91	
Ca++	0.43	0.04	2.76	315.8	88.6	0	91	
Cl-	0.51	0.06	1.70	374.9	88.9	0	92	
Mg++	0.116	0.007	0.644	84.5	88.6	0	91	
NO3-	0.34	0.07	2.05	248.4	88.9	0	92	
Q pH	4.49	3.88	6.40	23907.0	88.9	0	92	
K+	0.24	0.04	1.55	176.5	88.6	0	91	
Precip	-	0.1	68.4	730.3	100.0	210	365	
Na+	0.23	0.02	1.37	164.8	88.6	0	91	
SO4-- corr	0.94	0.14	3.26	686.8	88.9	0	92	
SO4--	0.96	0.14	3.27	700.3	88.9	0	92	

SK0005R LIESEK SLOVAKIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.44	0.03	2.14	392.2	89.1	0	93	
Ca++	0.39	0.06	1.94	341.6	89.1	0	93	
Cl-	0.42	0.06	2.05	372.1	88.9	0	92	
Mg++	0.061	0.006	0.508	53.6	89.1	0	93	
NO3-	0.34	0.06	2.42	300.4	88.9	0	92	
Q pH	4.49	3.82	6.10	28500.5	89.1	0	93	
K+	0.18	0.02	0.93	159.0	89.1	0	93	
Precip	-	0.1	46.9	885.7	99.5	167	363	
Na+	0.31	0.03	1.60	275.0	89.1	0	93	
SO4-- corr	0.82	0.15	3.49	725.9	88.9	0	92	
SO4--	0.84	0.16	3.57	744.4	88.9	0	92	

SK0006R STARINA SLOVAKIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.54	0.01	2.29	381.6	78.2	0	79	
Ca++	0.87	0.12	5.70	621.6	78.2	0	79	
Cl-	0.62	0.08	1.98	439.3	78.2	0	79	
Mg++	0.077	0.012	0.445	54.8	78.2	0	79	
NO3-	0.42	0.12	2.54	298.5	78.2	0	79	
Q pH	4.39	3.69	7.00	28710.4	78.2	0	79	
K+	0.20	0.01	0.75	144.7	78.2	0	79	
Precip	-	0.1	44.1	712.8	99.7	188	364	
Na+	0.37	0.04	1.27	262.9	78.2	0	79	
SO4-- corr	0.94	0.25	3.63	672.5	78.2	0	79	
SO4--	0.97	0.26	3.69	693.1	78.2	0	79	

TR0001R CUBUK II TYRKEY

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
NH4+	0.64	0.00	4.56	264.5	94.1	0	56	
Ca++	1.45	0.30	4.48	595.1	99.6	0	57	
Cl-	0.71	0.00	5.53	290.9	99.5	1	58	
Mg++	0.162	0.001	0.800	66.7	94.8	0	54	
NO3-	0.43	0.03	3.73	174.8	99.5	0	57	
pH	5.52	4.02	7.52	1247.5	100.0	0	60	
K+	0.34	0.10	4.53	138.4	99.6	0	57	
Precip	-	0.0	22.5	411.4	100.0	305	365	
Na+	0.35	0.07	5.76	143.9	96.5	0	55	
SO4-- corr	1.03	0.06	6.10	423.0	99.5	0	57	
SO4--	1.06	0.08	6.28	436.9	99.5	0	57	

YU0005R KAMENICKI VIS YUGOSLAVIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.81	0.06	2.33	534.5	99.9	0	112	
Q Ca++	2.38	0.47	13.48	1574.2	42.6	0	56	
I Cl-	1.23	0.08	7.15	812.3	98.9	0	100	
Mg++	0.312	0.030	1.960	206.1	42.6	0	56	
I NO3-	0.63	0.02	1.12	417.2	99.9	0	112	
pH	5.22	3.74	7.81	4024.7	99.9	0	113	
K+	0.46	0.02	4.12	306.9	42.6	0	56	
Precip	-	0.0	45.0	660.8	100.0	249	365	
Q Na+	1.77	0.22	8.48	1168.1	42.6	0	56	
SO4-- corr	1.92	0.24	11.52	1269.4	99.4	0	106	
SO4--	2.02	0.27	12.01	1333.6	99.9	0	113	

YU0008R ZABLJAK YUGOSLAVIA

January 1997 - December 1997

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num samples	Samp flag
I NH4+	0.45	0.03	1.95	541.4	98.3	0	109	
Q Ca++	1.28	0.21	9.94	1545.5	42.0	0	53	
I Cl-	0.80	0.08	8.05	970.5	96.5	0	99	
Mg++	0.120	0.030	1.080	145.3	42.0	0	53	
I NO3-	0.45	0.12	1.12	544.1	98.3	0	109	
pH	5.82	4.47	7.75	1832.8	98.3	0	109	
K+	0.28	0.02	4.18	337.2	42.0	0	53	
Precip	-	0.0	59.1	1211.2	100.0	233	365	
Q Na+	1.18	0.12	8.14	1430.6	42.0	0	53	
SO4-- corr	0.90	-0.18	10.76	1092.4	97.1	1	103	
SO4--	0.98	0.16	11.05	1180.5	98.3	0	109	

Annex 3

Annual statistics on gases and aerosol data

AT0002R ILLMITZ AUSTRIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	4.17	1.72	3.79	1.59	0.63	1.42	4.20	6.64	11.97	68.2	0	249	
SO4--	1.12	0.92	0.81	2.33	0.08	0.20	0.87	2.93	5.49	70.1	0	256	
SO2	4.41	6.09	2.93	2.21	0.69	1.03	2.52	13.78	42.50	78.9	0	288	

AT0004R ST. KOLOMAN AUSTRIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.19	1.02	0.93	1.96	0.20	0.34	0.82	3.38	6.57	47.1	0	172	
SO2	0.47	0.37	0.37	1.90	0.09	0.14	0.34	1.24	2.41	40.3	0	147	

AT0005R VORHEGG AUSTRIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.69	0.70	0.51	2.04	0.11	0.17	0.47	1.56	4.76	25.8	0	94	
SO2	0.61	0.44	0.51	1.80	0.18	0.20	0.44	1.44	2.23	20.0	0	73	

CH0001F JUNGFRAUJOCH SWITZERLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.12	0.18	0.07	2.34	0.00	0.02	0.07	0.36	1.54	74.5	1	272	
SO4--	0.13	0.15	0.07	2.88	0.02	0.02	0.07	0.45	0.90	96.4	101	352	
SO2	0.08	0.15	0.06	2.14	0.02	0.02	0.06	0.22	2.40	96.4	0	352	
SPM	3.5	4.0	2.1	2.8	0.5	0.5	1.9	10.6	23.4	78.1	59	285	

CH0002F PAYERNE SWITZERLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	5.57	3.24	4.81	1.71	1.18	2.14	4.52	12.03	18.76	97.5	0	356	
SO4--	0.93	0.77	0.70	2.15	0.02	0.18	0.71	2.14	6.14	99.2	1	362	
SO2	0.88	0.66	0.72	1.84	0.11	0.32	0.69	2.11	4.73	98.9	0	361	
NH3+NH4+	4.43	2.71	3.68	1.91	0.24	1.09	3.96	10.34	17.32	98.1	0	358	
HNO3+NO3	1.29	1.24	0.90	2.39	0.06	0.23	0.87	3.70	8.16	99.2	0	362	
SPM	26.3	19.6	21.0	2.0	3.2	7.2	21.2	63.9	111.8	94.5	0	345	

CH0003F TANIKON SWITZERLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	5.37	3.60	4.57	1.72	1.21	2.04	4.28	12.02	25.25	96.7	0	353	
SO2	0.98	1.02	0.77	1.87	0.21	0.31	0.73	2.29	9.51	96.4	0	352	
SPM	27.3	20.8	21.7	1.9	4.2	7.3	21.8	74.0	128.8	95.1	0	347	

CH0004F CHAUMONT SWITZERLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.45	1.20	2.19	1.61	0.55	0.95	2.27	4.40	8.43	96.2	0	351	
SO2	0.61	0.54	0.42	2.51	0.01	0.09	0.45	1.73	3.26	97.0	0	354	
SPM	13.9	9.4	11.1	2.0	2.2	3.3	11.9	29.4	57.5	95.6	0	349	

CH0005F RIGI SWITZERLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	3.06	1.74	2.68	1.66	0.42	1.10	2.72	7.28	10.76	96.2	0	351	
SO4--	0.60	0.42	0.45	2.31	0.04	0.10	0.50	1.40	2.22	97.8	0	357	
SO2	0.39	0.39	0.28	2.18	0.05	0.08	0.26	1.29	2.47	94.5	0	345	
SPM	14.4	9.9	11.5	2.0	2.2	3.3	11.7	32.1	64.9	99.5	0	363	

CS0001R SVRATOUCH CZECH REPUBLIC

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH3	2.26	2.13	1.73	1.98	0.25	0.58	1.64	7.37	14.64	99.7	0	364	
NH4+	2.02	2.16	1.36	2.44	0.08	0.31	1.32	5.90	15.68	98.6	0	360	
NO3-	0.73	0.62	0.55	2.17	0.02	0.16	0.56	2.06	5.08	98.6	0	360	
HNO3	1.24	0.69	1.07	1.75	0.18	0.40	1.12	2.48	4.71	100.0	0	365	
NO2	2.25	1.87	1.89	1.77	0.10	0.80	1.90	4.49	19.50	49.9	0	182	
SO4--	1.43	0.78	1.26	1.64	0.27	0.58	1.23	2.97	6.67	99.7	0	364	
Q SO2	4.44	3.93	3.28	2.15	0.50	1.00	3.00	13.00	23.00	99.7	0	364	

CS0003R KOSETICE CZECH REPUBLIC

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH3	1.90	0.81	1.77	1.45	0.74	1.07	1.73	3.45	6.50	98.6	0	360	
NH4+	1.45	0.90	1.20	1.90	0.16	0.39	1.32	3.18	5.12	98.6	0	360	
NO3-	0.65	0.39	0.57	1.67	0.07	0.25	0.56	1.36	4.09	98.6	0	360	
HNO3	1.14	0.75	0.98	1.71	0.11	0.44	1.00	2.06	7.22	98.4	0	359	
NO2	2.26	1.26	1.98	1.65	0.30	0.96	1.90	4.43	10.40	96.7	0	353	
SO4--	1.37	0.94	1.16	1.76	0.27	0.47	1.13	2.97	11.25	98.9	0	361	
Q SO2	4.05	3.63	2.93	2.22	0.50	1.00	2.50	11.50	23.50	98.6	0	360	

DE0001R WESTERLAND GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.85	2.91	2.11	2.06	0.66	0.75	1.98	7.17	23.55	99.2	0	362	
SO4--	0.93	0.57	0.78	1.83	0.20	0.22	0.80	2.10	4.50	99.7	0	364	
SO2	1.13	1.06	0.77	2.63	0.05	0.10	0.80	3.10	7.75	98.6	0	360	
SPM	26.2	13.3	23.3	1.6	7.0	11.0	23.0	51.0	99.0	96.4	0	352	

DE0002R LANGENBRUGGE GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.73	2.19	2.20	1.86	0.69	0.96	2.01	6.65	17.40	99.2	0	362	
SO4--	0.75	0.75	0.54	2.19	0.20	0.20	0.50	2.29	5.50	99.5	0	363	
SO2	1.28	2.30	0.53	3.61	0.00	0.10	0.45	5.86	16.25	98.4	2	359	
SPM	24.3	17.0	20.1	1.8	5.0	7.0	19.5	53.0	167.0	96.7	0	353	

DE0003R SCHAUINSLAND GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.17	0.57	1.07	1.48	0.45	0.60	1.03	2.15	5.25	100.0	0	365	
SO4--	0.41	0.29	0.34	1.78	0.20	0.20	0.30	1.00	2.30	100.0	0	365	
SO2	0.11	0.22	0.07	2.11	0.05	0.05	0.05	0.40	2.10	100.0	0	365	
SPM	13.3	9.9	9.8	2.3	0.5	2.0	11.0	31.0	65.0	95.3	4	348	

DE0004R DEUSELBACH GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.56	1.61	2.20	1.70	0.84	1.11	1.93	5.99	9.63	100.0	0	365	
SO4--	0.71	0.61	0.56	1.94	0.20	0.20	0.60	1.69	4.80	99.2	0	362	
SO2	1.60	3.41	0.55	4.48	0.05	0.05	0.65	5.30	34.30	100.0	0	365	
SPM	20.7	15.1	17.8	1.8	-91.0	6.0	19.0	41.8	84.0	99.7	2	364	

DE0005R BROTJACKLRIEGEL GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.89	1.17	1.67	1.59	0.33	0.93	1.50	3.95	11.22	99.5	0	363	
SO4--	0.58	0.47	0.46	1.97	0.20	0.20	0.50	1.50	4.60	100.0	0	365	
SO2	1.12	1.93	0.39	4.65	0.05	0.05	0.40	4.58	17.95	99.5	0	363	
SPM	15.4	9.9	12.3	2.1	0.5	3.0	13.0	35.0	72.0	97.5	4	356	

DE0007R NEUGLOBSOW GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.11	1.68	1.70	1.85	0.36	0.84	1.41	5.50	13.35	99.5	0	363	
SO4--	0.68	0.68	0.49	2.18	0.20	0.20	0.40	2.10	4.60	99.7	0	364	
SO2	1.49	2.70	0.44	5.02	0.05	0.05	0.43	6.59	22.90	99.5	0	363	
SPM	23.1	16.3	18.8	1.9	3.0	7.0	18.0	55.0	110.0	94.5	0	345	

DE0008R SCHMUCKE GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.85	1.16	1.61	1.66	0.48	0.81	1.42	4.28	7.83	100.0	0	365	
SO4--	0.52	0.43	0.41	1.93	0.20	0.20	0.40	1.40	2.80	100.0	0	365	
SO2	1.70	3.70	0.56	4.12	0.05	0.05	0.50	6.75	28.70	100.0	0	365	
SPM	17.3	11.9	13.6	2.1	0.5	4.0	15.0	39.9	75.0	99.2	2	362	

DE0009R ZINGST GERMANY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.22	1.91	1.84	1.74	0.39	0.93	1.65	4.74	17.82	99.5	0	363	
SO4--	0.58	0.53	0.43	2.07	0.20	0.20	0.40	1.68	3.40	99.5	0	363	
SO2	1.07	1.67	0.56	2.88	0.05	0.15	0.50	4.73	11.20	99.5	0	363	
SPM	23.8	14.3	20.3	1.8	4.0	8.0	21.0	52.7	93.0	99.5	0	363	

DK0003R TANGE DENMARK

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.91	0.59	0.74	1.98	0.02	0.25	0.74	1.94	3.78	92.9	2	339	
SO2	0.71	0.91	0.43	2.88	0.00	0.05	0.43	2.06	7.30	93.2	10	340	
NH3+NH4+	3.03	1.55	2.68	1.64	0.75	1.17	2.71	5.61	10.56	88.8	0	324	
HNO3+NO3	0.86	0.76	0.59	2.49	0.03	0.13	0.60	2.26	4.57	93.2	0	340	

DK0005R KELDSNOR DENMARK

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	1.10	0.68	0.91	1.89	0.14	0.31	0.97	2.47	4.45	98.1	0	358	
SO2	0.94	1.06	0.60	2.65	0.02	0.10	0.66	2.74	9.63	98.1	3	358	
NH3+NH4+	3.30	2.31	2.70	1.87	0.60	0.97	2.73	7.49	17.61	95.3	0	348	
HNO3+NO3	1.12	0.95	0.80	2.32	0.08	0.20	0.78	3.16	7.00	98.1	0	358	

DK0008R ANHOLT DENMARK

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.21	2.31	1.57	2.32	0.01	0.42	1.47	5.84	17.92	91.0	1	332	
SO4--	0.89	0.58	0.74	1.85	0.14	0.26	0.73	1.98	3.93	92.6	0	338	
SO2	0.79	0.83	0.54	2.51	0.00	0.11	0.59	2.01	6.99	92.1	2	336	
NH3+NH4+	1.44	1.25	1.00	2.47	0.07	0.24	0.99	4.15	8.59	88.8	0	324	
HNO3+NO3	0.80	0.73	0.53	2.55	0.07	0.10	0.54	2.34	4.05	90.4	0	330	

EE0009R LAHEMAA ESTONIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.20	0.12	0.17	1.77	0.00	0.06	0.16	0.45	0.75	94.8	1	346	

EE0011R VILSANDI ESTONIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.84	0.85	0.62	2.10	0.07	0.21	0.59	2.18	6.83	76.4	0	279	
SO2	0.54	0.31	0.47	1.71	0.10	0.18	0.48	1.11	2.21	70.1	0	256	

ES0001R TOLEDO SPAIN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	0.0	0.1	-	-	0.0	0.0	0.0	0.0	2.0	96.4	349	352	
NH4+	0.43	0.43	0.24	3.60	0.00	0.02	0.27	1.33	2.31	96.7	9	353	
NO2	2.69	2.32	1.67	3.09	0.25	0.25	2.35	7.11	16.40	92.9	75	339	
SO4--	0.73	0.55	0.56	2.14	0.05	0.14	0.60	1.57	4.16	96.7	0	353	
SO2	0.47	0.75	0.32	1.94	0.25	0.25	0.25	2.00	7.50	94.2	298	344	
NH3+NH4+	0.10	0.25	0.04	2.79	0.03	0.03	0.03	0.45	3.15	94.5	291	345	
HNO3+NO3	0.37	0.30	0.28	2.47	0.01	0.04	0.32	0.82	3.03	97.3	13	355	
SPM	19.7	13.9	15.4	2.1	1.0	3.5	17.0	44.5	110.0	96.2	0	351	

ES0003R ROQUETAS SPAIN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	0.3	2.1	-	-	0.0	0.0	0.0	1.0	35.0	89.3	291	326	
NH4+	0.79	0.88	0.45	3.18	0.01	0.06	0.51	2.61	6.48	89.6	0	327	
NO2	3.65	2.56	2.57	2.76	0.25	0.25	3.30	8.52	16.30	94.2	43	344	
SO4--	1.75	1.06	1.44	1.93	0.12	0.41	1.54	3.51	6.44	89.6	0	327	
SO2	0.63	1.30	0.35	2.25	0.25	0.25	0.25	2.78	15.60	100.0	307	365	
NH3+NH4+	0.52	0.85	0.13	6.23	0.03	0.03	0.03	1.95	6.98	95.6	188	349	
HNO3+NO3	0.69	0.71	0.45	2.61	0.01	0.11	0.44	1.99	5.13	91.2	0	333	
SPM	44.4	26.6	38.3	1.8	3.0	13.0	40.0	88.5	239.0	89.3	0	326	

ES0004R LOGRONO SPAIN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	0.2	0.6	-	-	0.0	0.0	0.0	2.0	4.0	93.7	292	342	
NH4+	0.70	0.74	0.43	2.95	0.00	0.05	0.46	2.04	4.88	94.0	1	343	
NO2	3.33	2.83	1.97	3.39	0.25	0.25	3.00	8.31	20.90	95.6	77	349	
SO4--	1.37	0.94	1.09	2.08	0.02	0.32	1.19	3.20	6.88	94.0	0	343	
SO2	0.52	0.84	0.33	2.07	0.25	0.25	0.25	2.31	6.30	98.1	308	358	
NH3+NH4+	1.86	1.54	1.04	4.19	0.03	0.03	1.46	4.79	7.44	94.0	32	343	
HNO3+NO3	0.14	0.22	0.07	2.96	0.01	0.01	0.08	0.45	2.42	86.6	31	316	
SPM	33.0	20.9	27.6	1.8	6.0	10.0	27.0	69.0	154.0	93.2	0	340	

ES0005R NOIA SPAIN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	0.3	0.7	-	-	0.0	0.0	0.0	2.0	4.0	62.5	171	228	
NH4+	0.63	0.72	0.23	5.63	0.00	0.00	0.29	2.19	2.64	62.5	13	228	
NO2	3.67	4.11	2.09	3.44	0.25	0.25	3.20	7.42	37.40	92.1	73	336	
SO4--	1.28	1.15	0.83	2.80	0.01	0.16	0.90	3.48	6.90	63.0	0	230	
SO2	0.74	1.83	0.35	2.39	0.25	0.25	0.25	2.91	17.50	92.3	284	337	
NH3+NH4+	0.50	0.73	0.14	5.75	0.03	0.03	0.22	2.01	4.47	75.3	130	275	
HNO3+NO3	0.06	0.10	0.04	2.36	0.01	0.01	0.03	0.14	1.44	69.3	61	253	
SPM	24.5	20.2	18.8	2.1	2.0	6.0	17.5	58.0	134.0	61.6	0	225	

ES0006R MAHON SPAIN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	0.2	0.7	-	-	0.0	0.0	0.0	2.0	4.0	84.7	271	309	
NH4+	0.28	0.32	0.14	3.78	0.00	0.00	0.16	0.96	1.67	84.7	17	309	
NO2	3.04	2.16	1.98	3.06	0.25	0.25	2.90	6.90	10.10	81.4	57	297	
SO4--	1.32	0.70	1.14	1.72	0.28	0.44	1.18	2.78	3.64	84.7	0	309	
SO2	0.49	1.01	0.31	1.95	0.25	0.25	0.25	1.60	13.10	95.1	304	347	
NH3+NH4+	0.63	0.53	0.37	3.84	0.03	0.03	0.60	1.61	2.92	42.5	27	155	
HNO3+NO3	0.40	0.62	0.15	4.38	0.01	0.01	0.13	1.28	5.23	76.2	38	278	
SPM	28.4	11.9	26.4	1.4	12.0	16.0	26.0	51.0	116.0	84.4	0	308	

ES0007R VIZNAR SPAIN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	0.1	0.3	-	-	0.0	0.0	0.0	0.3	2.0	91.5	317	334	
NH4+	0.43	0.53	0.25	3.09	0.00	0.04	0.29	1.17	7.10	91.8	3	335	
NO2	2.89	2.29	1.87	3.00	0.25	0.25	2.50	7.41	15.00	92.9	64	339	
SO4--	0.98	0.74	0.73	2.26	0.02	0.18	0.78	2.31	4.47	91.8	0	335	
SO2	0.58	1.17	0.34	2.17	0.25	0.25	0.25	2.57	12.00	99.2	308	362	
NH3+NH4+	0.90	0.98	0.38	5.43	0.03	0.03	0.72	2.25	7.97	87.7	81	320	
HNO3+NO3	0.14	0.15	0.08	3.02	0.01	0.01	0.09	0.40	0.90	81.4	28	297	
SPM	30.9	17.1	25.5	2.0	3.0	7.0	29.0	60.0	95.0	91.5	0	334	

FI0004F AHTARI FINLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.27	-	0.27	-	0.27	-	-	-	0.27	0.3	0	1	
SO4--	0.45	0.38	0.33	2.32	0.04	0.08	0.34	1.06	2.59	40.8	0	149	
SO2	0.33	0.43	0.18	3.02	0.01	0.03	0.18	1.16	2.25	40.5	0	148	
NH3+NH4+	0.24	0.22	0.16	2.87	0.00	0.03	0.19	0.69	1.48	40.8	0	149	
HNO3+NO3	0.11	0.09	0.09	2.03	0.01	0.03	0.08	0.25	0.61	40.5	0	148	

FI0009F UTO FINLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.73	1.26	1.35	2.09	0.06	0.35	1.42	3.88	9.09	82.7	0	302	
SO4--	0.63	0.47	0.46	2.40	0.00	0.10	0.50	1.50	2.70	90.1	0	329	
SO2	0.47	0.40	0.34	2.23	0.01	0.09	0.32	1.43	2.09	89.6	0	327	
NH3+NH4+	0.45	0.43	0.28	2.86	0.00	0.05	0.29	1.32	2.68	86.3	0	315	
HNO3+NO3	0.34	0.28	0.23	2.56	0.00	0.05	0.26	0.87	1.79	89.6	0	327	

FI0017F VIROLAHTI II FINLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.52	1.10	1.27	1.78	0.17	0.52	1.26	3.26	11.63	83.8	0	306	
SO4--	0.75	0.57	0.56	2.24	0.07	0.13	0.60	1.84	3.24	100.0	0	365	
SO2	0.79	0.96	0.46	2.88	0.01	0.09	0.45	2.68	5.89	100.0	0	365	
NH3+NH4+	0.96	0.96	0.68	2.38	0.02	0.16	0.71	2.31	9.24	98.4	0	359	
HNO3+NO3	0.26	0.22	0.19	2.22	0.03	0.06	0.19	0.69	1.61	100.0	0	365	

FI0022F OULANKA FINLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.35	0.22	0.28	2.12	0.00	0.06	0.31	0.73	1.49	89.6	1	327	
SO4--	0.45	0.34	0.32	2.54	0.00	0.06	0.38	1.14	1.97	98.9	0	361	
SO2	0.56	1.04	0.17	5.17	0.01	0.01	0.13	2.19	12.61	98.9	0	361	
NH3+NH4+	0.15	0.16	0.09	3.26	0.00	0.01	0.11	0.44	1.13	100.0	0	365	
HNO3+NO3	0.05	0.04	0.04	2.22	0.00	0.01	0.04	0.15	0.26	98.9	0	361	

FI0037F AHTARI II FINLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.74	0.62	0.58	1.96	0.13	0.22	0.54	1.89	5.26	59.2	0	216	
SO4--	0.46	0.38	0.33	2.32	0.05	0.08	0.34	1.19	1.94	56.7	0	207	
SO2	0.23	0.34	0.12	2.93	0.01	0.02	0.12	0.84	2.57	56.7	0	207	
NH3+NH4+	0.35	0.26	0.28	1.95	0.05	0.09	0.28	0.85	1.48	59.2	0	216	
HNO3+NO3	0.11	0.08	0.09	2.05	0.01	0.03	0.08	0.26	0.45	56.7	0	207	

FR0003F LA CROUZILLE FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.66	0.47	0.49	2.42	0.01	0.11	0.55	1.52	2.95	91.2	5	333	
SO2	0.49	0.39	0.34	2.71	0.05	0.05	0.43	1.11	3.55	92.9	59	339	

FR0005F LA HAGUE FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.65	0.67	0.43	2.54	0.01	0.13	0.40	2.16	3.71	94.2	4	344	
SO2	0.92	1.21	0.56	2.78	0.05	0.05	0.55	2.84	9.67	92.9	28	339	

FR0008F DONON FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.65	0.56	0.48	2.35	0.00	0.12	0.51	1.58	4.22	98.6	4	360	
SO2	0.90	0.91	0.62	2.60	0.00	0.05	0.69	2.32	8.07	96.4	28	352	

FR0009F REVIN FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	1.04	0.76	0.82	2.06	0.06	0.24	0.86	2.51	5.66	100.0	0	365	
SO2	1.35	1.25	0.94	2.57	0.05	0.05	0.94	3.71	9.92	96.7	18	353	

FR0010F MORVAN FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.69	0.53	0.48	2.87	0.01	0.10	0.56	1.69	3.39	90.1	12	329	
SO2	0.71	0.66	0.47	2.83	0.05	0.05	0.56	1.88	4.93	88.2	44	322	

FR0011F BONNEVAUX FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.51	0.35	0.39	2.32	0.01	0.10	0.43	1.10	2.35	92.3	6	337	
SO2	0.33	0.29	0.20	2.92	0.05	0.05	0.34	0.75	2.50	91.5	115	334	

FR0012F IRATY FRANCE

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.70	0.85	0.45	2.79	0.01	0.11	0.47	1.80	6.98	80.5	8	294	
SO2	0.78	0.58	0.54	2.82	0.05	0.05	0.67	1.81	3.31	82.2	39	300	

GB0002R ESKDALEMUIR UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.68	0.61	0.49	2.27	0.02	0.14	0.47	2.03	3.49	99.7	0	364	
Q SO2	0.73	0.84	0.51	2.19	0.13	0.18	0.42	2.08	9.46	99.7	0	364	
NH3+NH4+	0.96	0.94	0.62	2.67	0.00	0.14	0.63	2.91	4.95	98.1	1	358	
HNO3+NO3	0.37	0.45	0.19	3.31	0.00	0.03	0.19	1.42	2.74	99.2	4	362	

GB0004R STOKE FERRY UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	1.07	0.83	0.84	2.04	0.03	0.29	0.87	2.69	7.39	99.5	2	363	
Q SO2	1.91	1.58	1.50	1.97	0.12	0.53	1.45	4.95	10.78	99.5	1	363	

GB0006R LOUGH NAVAR UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.59	0.59	0.40	2.42	0.03	0.11	0.34	1.78	3.82	98.1	1	358	
Q SO2	0.38	0.50	0.29	1.80	0.11	0.15	0.26	0.94	5.17	97.8	7	357	

GB0007R BARCOMB MILLS UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	1.25	0.90	1.00	1.99	0.04	0.31	1.02	2.80	7.24	99.7	0	364	
Q SO2	1.38	1.77	0.95	2.17	0.25	0.31	0.88	3.97	16.99	99.7	0	364	

GB0013R YARNER WOOD UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.81	0.74	0.56	2.46	0.03	0.13	0.51	2.34	4.50	85.2	3	311	
Q SO2	0.93	1.09	0.65	2.24	0.12	0.12	0.60	2.39	7.60	84.7	28	309	

GB0014R HIGH MUFFLES UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH3+NH4+	1.91	1.51	1.44	2.19	0.14	0.36	1.46	4.84	11.24	95.1	0	347	
HNO3+NO3	0.82	0.73	0.57	2.37	0.09	0.14	0.54	2.27	3.90	94.8	0	346	

GB0015R STRATHVAICH DAM UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.31	0.43	0.21	2.30	0.00	0.10	0.20	0.90	2.90	16.4	1	60	
SO4--	0.44	0.47	0.29	2.53	0.03	0.08	0.28	1.33	4.27	93.2	10	340	
Q SO2	0.54	0.37	0.43	2.05	0.12	0.12	0.47	1.20	3.44	92.9	69	339	

GB0016R GLEN DYE UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.66	0.69	0.41	2.67	0.03	0.08	0.39	2.07	4.89	98.9	1	361	
Q SO2	0.76	0.88	0.53	2.22	0.12	0.12	0.43	2.46	6.75	99.2	24	362	

GB0036R HARWELL UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	6.64	5.18	4.92	2.23	0.50	1.30	5.00	16.58	31.80	71.8	0	262	

GB0037R LADYBOWER UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	4.44	2.92	3.68	1.86	0.50	1.38	3.70	10.95	15.40	86.3	0	315	

GB0038R LULLINGTON HEATH UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	4.13	3.00	3.35	1.88	0.60	1.20	3.20	10.11	20.00	78.4	0	286	

GB0043R NARBERTH UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.86	1.43	1.45	2.00	0.20	0.58	1.35	4.40	8.60	70.4	0	257	

GB0045R WICKEN FEN UNITED KINGDOM

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	7.21	3.34	6.43	1.66	1.50	2.32	6.70	12.24	16.10	13.2	0	48	

GR0001R ALIARTOS GREECE

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	NO2	3.31	1.61	2.94	1.65	0.50	1.17	3.00	6.17	10.94	67.9	0	248	
I	SO4--	1.84	1.63	1.13	2.99	0.17	0.25	1.53	4.59	11.69	62.7	0	229	
I	SO2	4.20	5.00	2.69	2.45	0.56	1.20	2.09	11.92	48.16	66.0	0	241	

HU0002R K-PUSZTA HUNGARY

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	H+	-2.2	45.0	-	-	-230.0	-92.4	2.3	41.6	169.1	46.0	75	168	
	NH3	1.19	0.85	0.75	3.61	0.02	0.02	1.07	2.80	4.12	92.3	27	337	
	NH4+	1.90	1.25	1.49	2.25	0.01	0.43	1.56	4.33	7.16	92.6	3	338	
I	NO2	1.77	1.05	1.45	2.05	0.01	0.46	1.50	3.89	6.67	89.0	0	325	
Q	SO4--	2.06	1.44	1.62	2.18	0.00	0.53	1.67	4.78	10.56	94.0	2	343	
Q	SO2	5.34	6.37	3.43	2.58	0.10	0.80	3.45	15.44	51.64	98.1	1	358	
	HNO3+NO3	1.07	0.80	0.84	2.07	0.01	0.30	0.77	2.48	5.87	94.0	2	343	

IE0001R VALENTIA OBS. IRELAND

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	NO2	0.74	0.78	0.41	3.25	0.05	0.05	0.50	2.39	4.50	98.9	33	361	
	SO4--	0.72	0.55	0.56	2.05	0.01	0.19	0.50	1.76	3.06	98.6	1	360	
	SO2	0.48	0.55	0.29	2.61	0.02	0.08	0.24	1.64	2.98	98.4	1	359	

IE0002R TURLOUGH HILL IRELAND

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	SO4--	0.56	0.62	0.33	3.27	0.00	0.02	0.37	1.73	6.67	97.5	8	356	
	SO2	0.82	1.55	0.26	4.24	0.00	0.05	0.20	4.43	10.64	97.8	57	357	

IE0003R THE BURREN IRELAND

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	SO4--	0.44	0.36	0.33	2.17	0.01	0.10	0.33	1.19	2.26	99.7	0	364	

IE0004R RIDGE OF CAPARD IRELAND

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	SO4--	0.33	0.28	0.24	2.29	0.01	0.07	0.24	0.86	1.93	97.5	0	356	

IS0002R IRAFOSS ICELAND

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	SO4--	0.27	0.37	0.18	2.86	0.00	0.01	0.21	0.70	5.87	100.0	9	365	

IT0001R MONTELIBRETTI ITALY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH3	1.47	0.55	1.36	1.52	0.12	0.69	1.41	2.41	3.99	95.6	0	349	
NH4+	1.72	1.01	1.45	1.83	0.23	0.50	1.53	3.61	6.33	95.6	0	349	
NO3-	0.87	0.75	0.65	2.14	0.08	0.18	0.66	2.63	4.64	95.6	0	349	
HNO3	0.16	0.15	0.10	2.87	0.00	0.01	0.11	0.42	0.88	95.6	3	349	
NO2	3.51	1.32	3.24	1.53	0.49	1.56	3.41	5.69	10.20	77.8	0	284	
SO4--	1.25	0.78	1.02	1.95	0.18	0.32	1.13	2.85	4.11	95.6	0	349	
SO2	0.94	0.61	0.76	2.00	0.04	0.25	0.79	2.20	3.38	95.6	0	349	

IT0004R ISPRA ITALY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
H+	13.3	11.0	-	-	1.0	1.0	10.0	36.0	61.0	100.0	0	365	
NH4+	2.31	1.97	1.62	2.48	0.12	0.32	1.77	5.86	12.50	100.0	0	365	
NO3-	1.51	1.47	0.99	2.62	0.06	0.18	0.98	4.45	7.59	100.0	0	365	
NO2	6.74	3.62	5.85	1.71	1.70	2.40	5.75	13.07	20.80	100.0	0	365	
SO4--	1.34	0.96	1.00	2.31	0.09	0.19	1.13	3.10	5.38	100.0	0	365	
SO2	1.16	0.64	1.03	1.64	0.50	0.50	1.00	2.30	3.90	100.0	0	365	
SPM	46.8	27.2	39.4	1.8	7.0	13.0	41.0	99.8	153.0	100.0	0	365	

LT0015R PREILA LITHUANIA

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	NH4+	1.07	1.65	0.54	3.57	0.01	0.05	0.60	3.02	17.66	95.6	0	349	
	NO3-	0.69	0.75	0.47	2.37	0.02	0.11	0.47	1.93	7.02	95.6	0	349	
	NO2	2.90	2.93	2.07	2.28	0.09	0.48	2.14	8.48	19.61	97.5	0	356	
I	SO2	1.42	2.01	0.89	2.54	0.06	0.23	0.91	3.53	23.26	95.3	0	348	
	NH3+NH4+	2.21	2.07	1.40	2.83	0.06	0.23	1.62	5.90	12.55	95.1	0	347	
	HNO3+NO3	1.02	0.95	0.73	2.30	0.04	0.20	0.69	2.87	6.42	96.2	0	351	

LV0010R RUCAVA LATVIA

January 1997 - December 1997

	Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
	NH3	0.50	0.42	0.28	3.85	0.01	0.01	0.42	1.26	2.08	103.3	29	346	
	NH4+	0.91	0.55	0.72	2.21	0.01	0.17	0.83	1.83	3.29	104.1	2	349	
	NO3-	0.61	0.31	0.54	1.70	0.06	0.20	0.56	1.20	2.01	104.1	0	349	
	HNO3	0.31	0.23	0.21	2.99	0.00	0.01	0.25	0.70	1.35	100.5	21	336	
	NO2	1.15	0.71	0.96	1.85	0.00	0.40	1.00	2.57	4.20	103.6	1	347	
Q	SO4--	0.87	0.66	0.56	3.40	0.01	0.01	0.74	2.19	4.98	104.1	26	349	
I	SO2	0.84	0.68	0.73	2.12	0.00	0.00	0.70	2.30	3.40	104.1	31	349	
	NH3+NH4+	1.41	0.69	1.23	1.77	0.09	0.41	1.33	2.67	3.51	103.3	0	346	
	HNO3+NO3	0.94	0.44	0.83	1.67	0.13	0.33	0.88	1.69	2.65	100.5	0	336	

NL0009R KOLLUMERWAARD NETHERLANDS

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	1.66	1.26	1.23	2.28	0.04	0.28	1.24	4.04	8.28	99.5	0	363	
NO3-	0.99	0.77	0.70	2.47	0.09	0.11	0.78	2.47	4.18	99.5	14	363	
NO2	4.77	3.87	3.51	2.29	0.00	0.92	3.96	11.07	24.70	69.6	1	254	
SO4--	1.11	0.81	0.86	2.09	0.13	0.24	0.84	2.61	4.88	99.5	2	363	
SO2	1.02	1.50	1.04	1.85	-1.00	-0.50	0.50	3.11	11.02	70.1	62	256	

NL0010R VREEDEPEEL NETHERLANDS

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH3	17.50	11.03	14.10	2.01	1.59	4.01	15.94	39.15	68.25	71.0	0	259	
NH4+	1.75	1.55	1.15	2.86	-0.01	0.14	1.25	4.56	11.57	93.4	1	341	
NO3-	0.99	0.90	0.66	2.68	0.09	0.09	0.76	2.65	6.90	93.4	23	341	
NO2	8.49	4.57	7.45	1.69	1.22	3.05	7.62	15.25	36.60	94.5	0	345	
SO4--	1.09	0.99	0.74	2.50	0.13	0.13	0.81	2.84	7.53	93.4	22	341	
SO2	2.31	3.62	1.57	2.26	-0.50	0.00	1.50	6.51	38.58	99.2	28	362	

NO0001R BIRKENES NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
Q NO2	0.69	0.91	0.44	2.61	0.01	0.09	0.44	1.96	11.51	99.7	2	364	
SO4--	0.53	0.55	0.31	3.21	0.00	0.03	0.34	1.49	5.25	97.5	2	356	
SO2	0.22	0.31	0.10	3.97	0.01	0.01	0.12	0.83	1.99	97.8	55	357	
NH3+NH4+	0.54	0.58	0.34	2.82	0.00	0.05	0.35	1.70	5.49	97.8	5	357	
HNO3+NO3	0.24	0.27	0.15	2.67	0.02	0.02	0.15	0.77	1.96	97.5	0	356	

NO0008R SKREAADALEN NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
Q NO2	0.53	0.67	0.36	2.29	0.01	0.09	0.35	1.61	7.05	100.0	1	365	
SO4--	0.42	0.46	0.24	3.29	0.00	0.02	0.26	1.42	3.24	98.4	7	359	
SO2	0.14	0.27	0.04	4.16	0.01	0.01	0.04	0.67	1.72	98.9	132	361	
NH3+NH4+	1.41	0.89	1.14	2.09	0.03	0.37	1.24	2.84	7.19	99.2	0	362	
HNO3+NO3	0.18	0.20	0.12	2.57	0.01	0.02	0.12	0.56	1.66	98.1	0	358	

NO0015R TUSTERVATN NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
Q NO2	0.18	0.17	0.13	2.21	0.01	0.04	0.13	0.44	1.66	99.2	15	362	
SO4--	0.27	0.29	0.17	2.96	0.00	0.02	0.19	0.75	2.70	98.9	8	361	
SO2	0.09	0.18	0.03	3.54	0.01	0.01	0.03	0.47	1.26	99.5	154	363	
NH3+NH4+	1.15	1.29	0.73	2.61	0.06	0.14	0.77	3.50	12.16	99.5	0	363	
HNO3+NO3	0.07	0.06	0.05	2.03	0.01	0.02	0.05	0.16	0.56	98.9	0	361	

NO0039R KAARVATN NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
Q NO2	0.25	0.24	0.17	2.57	0.01	0.01	0.19	0.60	2.05	100.0	19	365	
SO4--	0.22	0.33	0.11	3.59	0.00	0.00	0.13	0.69	3.03	99.7	20	364	
SO2	0.05	0.16	0.02	2.82	0.00	0.01	0.01	0.16	2.06	99.7	188	364	
NH3+NH4+	0.50	0.68	0.25	3.20	0.02	0.04	0.19	2.04	4.10	99.5	0	363	
HNO3+NO3	0.07	0.08	0.05	2.19	0.01	0.02	0.05	0.22	0.92	99.7	0	364	

NO0041R OSEN NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
Q NO2	0.48	0.65	0.33	2.27	0.03	0.09	0.32	1.19	9.53	99.7	0	364	
SO4--	0.30	0.33	0.16	3.70	0.00	0.01	0.19	0.95	2.18	98.4	13	359	
SO2	0.09	0.24	0.03	3.30	0.01	0.01	0.03	0.31	3.15	98.4	129	359	
NH3+NH4+	0.34	0.34	0.24	2.43	0.02	0.05	0.24	1.03	2.73	97.8	0	357	
HNO3+NO3	0.10	0.09	0.07	2.43	0.01	0.02	0.07	0.28	0.58	98.1	0	358	

NO0042R SPITZBERGEN NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	0.19	0.25	0.10	3.70	0.00	0.00	0.12	0.56	3.33	97.3	25	355	
SO2	0.13	0.26	0.06	3.26	0.01	0.01	0.05	0.55	2.78	97.3	81	355	
NH3+NH4+	0.13	0.34	0.09	2.06	0.03	0.03	0.10	0.25	6.18	97.0	0	354	
HNO3+NO3	0.07	0.09	0.05	2.09	0.01	0.02	0.05	0.18	1.26	97.3	0	355	

NO0055R KARASJOK NORWAY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
Q NO2	0.20	0.15	0.15	2.21	0.01	0.04	0.16	0.48	0.87	96.7	12	353	
SO4--	0.33	0.34	0.20	2.78	0.00	0.04	0.20	1.00	2.49	94.2	2	344	
SO2	0.47	1.29	0.07	6.19	0.01	0.01	0.05	1.99	11.12	92.3	96	337	
NH3+NH4+	0.16	0.18	0.15	2.59	0.00	0.00	0.10	0.48	1.18	94.2	39	344	
HNO3+NO3	0.07	0.06	0.05	1.87	0.02	0.02	0.05	0.15	0.58	92.3	0	337	

PL0002R JARCZEW POLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	1.70	1.28	1.27	2.32	0.05	0.31	1.41	4.03	10.59	99.2	0	362	
NO3-	0.68	0.60	0.49	2.32	0.04	0.11	0.51	1.70	3.73	99.2	0	362	
NO2	3.05	1.93	2.63	1.68	0.70	1.20	2.60	6.82	17.80	97.3	0	355	
SO4--	2.27	1.30	1.93	1.84	0.19	0.60	2.09	4.84	9.91	99.2	0	362	
SO2	3.46	3.27	2.31	2.62	0.10	0.40	2.50	10.17	20.50	99.2	0	362	
NH3+NH4+	3.37	2.10	2.87	1.75	0.48	1.22	2.87	7.75	12.94	97.8	0	357	
HNO3+NO3	0.83	0.62	0.64	2.13	0.04	0.18	0.68	1.82	3.94	97.5	0	356	

PL0003R SNIEZKA POLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	0.68	0.55	0.50	2.32	0.03	0.10	0.52	1.62	3.48	99.2	0	362	
NO3-	0.21	0.23	0.14	2.55	0.01	0.03	0.13	0.62	1.70	99.2	0	362	
NO2	1.15	0.62	1.00	1.72	0.10	0.40	1.00	2.20	4.80	99.2	0	362	
SO4--	0.75	0.59	0.56	2.26	0.05	0.14	0.60	1.88	3.49	99.2	0	362	
SO2	1.17	0.80	0.91	2.14	0.10	0.20	1.00	2.70	5.30	99.2	0	362	
NH3+NH4+	1.96	1.40	1.54	2.06	0.11	0.43	1.42	4.83	7.99	99.2	0	362	
HNO3+NO3	0.33	0.33	0.22	2.41	0.02	0.05	0.21	0.91	2.20	99.2	0	362	

PL0004R LEBA POLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	1.08	0.84	0.81	2.26	0.03	0.23	0.81	2.53	6.03	98.4	0	359	
NO3-	0.53	0.50	0.36	2.65	0.01	0.07	0.37	1.58	2.96	98.4	0	359	
NO2	1.99	1.84	1.49	2.08	0.20	0.50	1.50	5.20	15.30	98.9	0	361	
SO4--	1.33	0.92	1.00	2.38	0.05	0.17	1.19	2.93	7.53	98.4	0	359	
SO2	1.95	2.17	1.25	2.68	0.10	0.20	1.40	5.72	19.70	98.4	0	359	
NH3+NH4+	1.60	1.12	1.25	2.14	0.03	0.36	1.27	3.65	6.91	99.5	0	363	
HNO3+NO3	0.65	0.56	0.46	2.48	0.01	0.11	0.47	1.85	2.83	99.5	0	363	

PL0005R DIABLA GORA POLAND

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.05	1.23	0.59	3.30	0.02	0.04	0.61	3.47	8.98	96.7	22	353	
SO4--	1.19	1.03	0.83	2.43	0.04	0.16	0.89	3.24	6.65	97.3	2	355	
SO2	1.39	2.18	0.58	3.78	0.05	0.09	0.60	5.42	13.12	98.6	13	360	
NH3+NH4+	1.37	1.00	1.05	2.32	0.01	0.25	1.16	3.10	7.81	100.0	3	365	
HNO3+NO3	0.65	0.65	0.45	2.29	0.06	0.13	0.40	1.88	4.65	97.5	4	356	

RU0001R JANISKOSKI RUSSIAN FEDERATION

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	0.19	0.15	0.18	2.07	0.00	0.00	0.15	0.49	0.82	43.0	53	157	
NO3-	0.04	0.04	0.04	2.08	0.00	0.01	0.03	0.12	0.20	43.0	26	157	
NO2	0.03	0.07	0.67	2.12	0.00	0.00	0.00	0.20	0.40	43.0	152	157	
SO4--	0.41	0.42	0.26	3.01	0.00	0.02	0.25	1.30	1.86	43.0	11	157	
SO2	1.57	3.43	0.78	3.73	0.00	0.00	0.20	8.02	20.90	43.0	75	157	
NH3+NH4+	0.19	0.28	0.13	2.19	0.03	0.03	0.12	0.37	3.19	43.0	63	157	

RU0013R PINEGA RUSSIAN FEDERATION

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	0.32	0.29	0.28	2.20	0.00	0.00	0.24	0.77	1.90	63.0	119	230	
NO3-	0.03	0.03	0.03	2.09	0.00	0.00	0.02	0.08	0.29	63.0	173	230	
NO2	0.10	0.21	0.42	2.27	0.00	0.00	0.00	0.30	1.60	57.3	198	209	
SO4--	0.43	0.37	0.30	2.51	0.01	0.06	0.33	1.09	2.06	63.0	22	230	
SO2	0.28	0.35	0.28	2.14	0.00	0.00	0.20	0.95	1.90	62.7	104	229	

RU0016R SHEPELJOVO RUSSIAN FEDERATION

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH4+	0.40	0.34	0.32	2.27	0.00	0.00	0.31	1.07	2.04	80.3	82	293	
NO3-	0.17	0.14	0.14	1.95	0.00	0.05	0.13	0.44	0.97	80.3	6	293	
NO2	0.90	0.75	0.70	2.05	0.00	0.20	0.70	2.22	5.20	81.1	17	296	
SO4--	0.55	0.44	0.41	2.25	0.00	0.11	0.40	1.37	3.20	80.3	9	293	
SO2	1.15	1.00	0.83	2.27	0.10	0.20	0.80	3.23	6.60	80.3	21	293	

SE0002F RORVIK SWEDEN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.01	2.02	1.51	2.06	0.24	0.50	1.38	5.46	24.10	99.5	0	363	
SO4--	0.75	0.54	0.55	2.49	0.01	0.11	0.67	1.73	3.24	98.6	0	360	
SO2	0.64	0.63	0.47	2.22	0.01	0.13	0.47	1.50	7.24	98.9	0	361	
NH3+NH4+	0.94	0.77	0.68	2.27	0.07	0.18	0.70	2.48	5.17	98.6	25	360	
HNO3+NO3	0.53	0.50	0.35	2.53	0.05	0.08	0.35	1.70	2.79	98.6	3	360	

SE0005F BREDKALEN SWEDEN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.19	0.24	0.14	2.11	0.04	0.04	0.14	0.43	3.36	99.2	54	362	
SO4--	0.24	0.26	0.15	2.92	0.00	0.01	0.14	0.71	1.84	98.9	8	361	
SO2	0.10	0.17	0.06	2.92	0.00	0.01	0.04	0.42	1.83	98.9	11	361	
NH3+NH4+	0.17	0.21	0.09	2.94	0.01	0.02	0.09	0.49	1.66	98.4	122	359	
HNO3+NO3	0.05	0.04	0.04	2.20	0.00	0.01	0.03	0.12	0.32	98.9	35	361	

SE0008F HOBURG SWEDEN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	1.19	1.54	0.80	2.30	0.03	0.26	0.73	3.54	16.72	98.6	2	360	
SO4--	0.62	0.49	0.44	2.55	0.00	0.07	0.51	1.52	2.82	99.5	2	363	
SO2	0.71	0.72	0.47	2.71	0.01	0.08	0.57	1.85	7.79	99.5	0	363	

SE0011F VAVIHILL SWEDEN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.05	2.31	1.44	2.18	0.33	0.48	1.28	6.32	19.59	99.7	0	364	
SO4--	0.77	0.55	0.59	2.25	0.00	0.13	0.67	1.84	3.35	99.2	1	362	
SO2	0.68	0.89	0.37	3.06	0.01	0.05	0.38	2.34	7.35	99.2	0	362	
NH3+NH4+	1.21	0.90	0.92	2.18	0.05	0.24	0.99	2.91	5.61	98.9	29	361	
HNO3+NO3	0.55	0.51	0.37	2.62	0.00	0.08	0.38	1.64	3.01	99.2	16	362	

SE0012F ASPVRETEN SWEDEN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.90	0.73	0.72	1.86	0.20	0.30	0.64	2.37	5.42	99.7	0	364	
SO4--	0.59	0.51	0.39	2.84	0.00	0.05	0.45	1.61	3.29	98.9	5	361	
SO2	0.37	0.39	0.22	2.88	0.01	0.03	0.25	1.15	2.41	98.6	0	360	
NH3+NH4+	0.51	0.44	0.35	2.40	0.03	0.08	0.37	1.47	3.03	98.6	62	360	
HNO3+NO3	0.23	0.20	0.17	2.24	0.01	0.04	0.19	0.61	1.34	98.6	6	360	

SE0013F ESRANGE SWEDEN

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	0.20	0.27	0.15	1.95	0.04	0.04	0.15	0.39	2.82	32.9	10	120	
SO4--	0.21	0.25	0.13	3.16	0.00	0.01	0.12	0.65	1.51	94.8	12	346	
SO2	0.28	0.46	0.12	3.68	0.00	0.02	0.10	1.37	3.25	94.5	4	345	

SI0008R ISKRBA SLOVENIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
SO4--	1.22	0.96	0.86	2.57	0.02	0.15	1.01	2.86	6.21	99.2	0	362	
SO2	1.31	2.30	0.57	3.75	0.00	0.06	0.60	4.47	16.25	99.2	2	362	
NH3+NH4+	1.20	0.76	0.95	2.08	0.10	0.23	1.07	2.56	4.11	99.2	0	362	
HNO3+NO3	0.30	0.29	0.20	2.51	0.00	0.03	0.21	0.80	2.75	99.2	3	362	

SK0002R CHOPOK SLOVAKIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO3-	0.14	0.16	0.09	2.31	0.05	0.05	0.05	0.45	1.07	98.9	251	361	
HNO3	0.07	0.07	0.05	2.29	0.01	0.01	0.05	0.17	0.69	98.9	0	361	
NO2	1.28	0.37	1.23	1.35	0.50	0.70	1.30	1.89	2.90	99.2	0	362	
SO4--	0.68	0.51	0.51	2.23	0.08	0.08	0.52	1.67	2.60	98.9	27	361	
SO2	1.16	0.88	0.90	2.07	0.10	0.30	0.90	2.80	6.10	98.9	0	361	

SK0004R STARA LESNA SLOVAKIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO3-	0.32	0.22	0.25	2.05	0.05	0.05	0.28	0.69	2.17	99.2	41	362	
HNO3	0.08	0.08	0.06	2.21	0.01	0.02	0.05	0.29	0.48	99.5	0	363	
NO2	2.26	0.91	2.13	1.40	1.00	1.30	2.00	3.90	7.90	96.7	0	353	
SO4--	1.25	0.62	1.11	1.66	0.25	0.48	1.11	2.49	3.33	99.2	0	362	
SO2	2.40	2.27	1.78	2.10	0.20	0.60	1.60	7.20	18.50	99.5	0	363	

SK0005R LIESEK SLOVAKIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO3-	0.55	0.36	0.46	1.84	0.05	0.21	0.44	1.21	2.97	95.1	7	347	
HNO3	0.08	0.07	0.06	1.92	0.01	0.03	0.06	0.20	0.57	95.1	0	347	
NO2	2.65	1.40	2.42	1.49	0.80	1.47	2.30	5.20	11.80	96.7	0	353	
SO4--	1.54	0.94	1.33	1.69	0.22	0.57	1.32	3.15	7.90	95.3	0	348	
SO2	5.92	8.56	3.16	2.95	0.10	0.70	2.80	23.59	58.00	95.1	0	347	

SK0006R STARINA SLOVAKIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO3-	0.33	0.24	0.24	2.34	0.05	0.05	0.29	0.74	1.52	98.6	70	360	
HNO3	0.29	0.30	0.20	2.29	0.02	0.06	0.21	0.76	2.16	97.0	0	354	
NO2	1.72	0.71	1.61	1.41	0.60	1.00	1.50	3.30	5.40	97.8	0	357	
SO4--	1.60	1.06	1.33	1.90	0.08	0.49	1.33	3.33	8.63	98.6	4	360	
SO2	3.85	3.95	2.68	2.29	0.20	0.70	2.50	11.74	30.60	97.0	0	354	

TR0001R CUBUK II TYRKEY

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NH3	0.24	0.23	0.16	2.89	-0.02	0.01	0.19	0.63	1.85	84.4	28	308	
NH4+	0.26	0.31	0.17	3.13	-0.01	0.01	0.16	0.73	1.74	84.1	24	307	
NO3-	0.08	0.14	0.07	3.06	-0.03	0.00	0.03	0.41	0.90	84.4	68	308	
HNO3	0.06	0.04	0.05	2.28	-0.01	0.01	0.05	0.15	0.26	83.8	12	306	
NO2	0.87	0.94	0.56	2.73	-0.03	0.10	0.59	2.65	6.95	90.1	4	329	
SO4--	0.37	0.40	0.22	3.45	-0.02	0.01	0.23	1.04	2.51	84.4	17	308	
I SO2	0.77	1.12	0.39	4.30	-0.11	-0.02	0.38	2.78	8.14	83.8	59	306	
NH3+NH4+	0.50	0.38	0.37	2.48	0.00	0.05	0.44	1.03	3.35	84.4	3	308	
HNO3+NO3	0.14	0.15	0.10	2.40	-0.01	0.02	0.09	0.51	0.99	84.4	10	308	

YU0005R KAMENICKI VIS YUGOSLAVIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.32	1.41	2.00	1.76	0.45	1.00	2.10	4.59	13.70	93.4	16	341	
SO2	2.74	3.16	1.90	2.10	1.25	1.25	1.25	9.90	21.30	94.8	253	346	

YU0008R ZABLJAK YUGOSLAVIA

January 1997 - December 1997

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num samples	Samp flag
NO2	2.37	1.37	2.03	1.77	0.45	0.48	2.10	5.20	9.60	98.9	18	361	
SO2	1.64	1.76	1.40	1.52	1.25	1.25	1.25	3.80	22.10	87.9	295	321	

Annex 4

List of data reports

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Annex 5

EMEP Data Quality Objectives (DQO)

10 % accuracy or better for oxidized sulphur and oxidized nitrogen in single analysis in the laboratory,

15 % accuracy or better for other components in the laboratory,

0.05 units for pH,

15–25 % uncertainty for the combined sampling and chemical analysis (components to be specified later),

90 % data completeness of the daily values.

The targets, with respect to accuracy in the laboratory, for the very lowest concentrations of the main components in precipitation follow the WMO GAW (1992) recommendations for regional stations:

	Accuracy	
SO_4^{2-}	0.032 mg S/l	(1 µmol/l)
NO_3^-	0.014 mg N/l	(1 µmol/l)
NH_4^+	0.028 mg N/l	(2 µmol/l)
Cl^-	0.107 mg Cl/l	(3 µmol/l)
Ca^{2+}	0.012 mg Ca/l	(0.3 µmol/l)
K^+	0.012 mg K/l	(0.3 µmol/l)
Mg^{2+}	0.007 mg Mg/l	(0.3 µmol/l)
Na^+	0.007 mg Na/l	(0.3 µmol/l)

The targets for the wet analysis of components extracted from air filters are the same as for precipitation. For SO_2 the limit above for sulphate is valid for the medium volume method with impregnated filter. For NO_2 determined as NO_2^- in solution the accuracy for the lowest concentrations is 0.01 mg N/l.

The aim for data completeness is valid for the current definition used by the CCC. This definition will, however, be harmonised with the WMO GAW definition and modified.

It is understood that there is a need to investigate additional uncertainty caused by local influence on the measurements at the sites (not representative siting).

It may be necessary to reconsider the DQO for volatile organic components (VOC), persistent organic pollutants (POP), and trace metals (HM).