

- Meta data
 - “site and surroundings” descriptions are prepared for 5 countries and 73 sites
 - Data flagging
- Availability of data
 - all daily data are now easily downloadable
 - air mass classification and model estimates are also made available
- Exchange of opinions and experiences with national experts
- List of measures and tools for the assessment of data
 - the software used by the CCC is available through the web-page
 - air mass classification are available (tools and trajectory positions are available in addition for a number of sites)
 - Reports; recommendations for methods to assess data have previously been presented in various workshop reports. Indexing of these to the web-site is planned.
 - The ongoing assessment will also give further recommendations. The CCC-report 7-2000 could be used (only sparse feedback so far).
- Amendments to the EMEP-manual on PM sampling and analysis



Back



Forward



Stop



Refresh



Home



Search



Favorites



History



Mail



Print



Edit



Discuss

Address http://www.nilu.no/projects/ccc/



Go

Links

emep

Co-operative programme for monitoring
and evaluation of the long range
transmission of air pollutants in Europe

msc-w



DNMI

Meteorological Synthesizing
Centre - West

msc-e

Meteorological Synthesizing
Centre - East

ccc

Chemical Co-ordinating
Centre

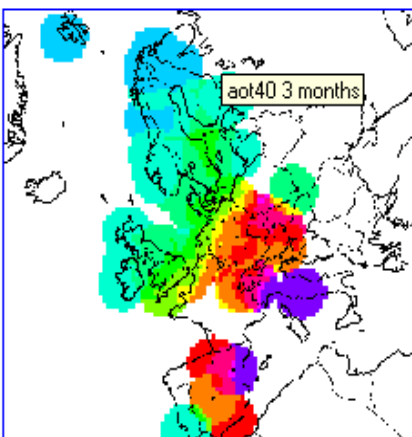
NILU

ciam

Center for Integrated Assessment Modelling

Science for
Global Insight

Chemical Co-ordinating Centre of EMEP (CCC)

[Measurement data](#)[Time series](#)[Data submission](#)[Measurement network](#)[Site descriptions](#) **NEW**[EMEP/CCC reports 2000](#)[List of EMEP/CCC reports](#)[EMEP Expert meetings and Workshops](#)[Relevant links](#)[AOT40 \(ppbh\)
May, June July 1995
daylight hours](#)[Measurement programme](#)
[EMEP manual and SOPs](#) **NEW**



Norwegian Institute for Air Research

Time series of measurements and model values

Measurement data

Time series of daily values and monthly and annual means of main components in air and precipitation for measurement sites in the EMEP network from 1977 to 1998 are currently available. This page presents daily values and monthly and annual means ordered by station. [Monthly means ordered by component](#) and [annual means ordered by component](#) are also available.

Note that as country names changed in Europe in the beginning of the 1990s, station codes were changed accordingly, and sites in these countries may be listed twice. The value -999.9 is used for missing values or if a parameter is not measured at that site. [Measurement units](#) are as in the measurement programme.

All daily values have been flagged with up to 3 [flags](#). For non-daily sampling the values have been assigned to the first day in the measurement period, while subsequent days in the same sample have been marked with 'nd'. All files with daily data have been zipped.

At the end of some of the daily measurement files, a column have been added giving information about the origin of the air masses arriving at each measurement site. 96 h back trajectories have been calculated every 6 h for the years 1985-1996. The sector data have been calculated as a cooperation between CCC and Msc- using winds for the 0.925 sigma-level (approx. 700 m above ground) from the numerical weather prediction model at The Norwegian Meteorological Institute. A transport sector between 1 and 8, is allocated on a given day if more than 50% of the co-ordinate points between 150 and 1500 km from the receptor, on the 4 trajectories arriving that day, are within each of a 22.5° sector. Sector 1 equals N, sector 2 NE, 3, E etc. clockwise to NW. Otherwise the origin is classified as undetermined, sector 9.

Model data

Daily data on concentrations and wet and dry deposition of sulphur and nitrogen compounds from 1988-1996 calculated by the [EMEP Lagrangian Acid Deposition Model](#), are currently available. The model files are compiled in a simple ascii [format](#) compatible with the measurement file format, with date and values in columns

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address <http://www.nilu.no/projects/ccc/timeseries/index.html> Go

To download a file, right click on the station codes in the list below and choose 'save as'.

- [Austria](#)
- [Belgium](#)
- [Belarus](#)
- [Bosnia Hercegovina](#)
- [Croatia](#)
- [Czech Republic](#)
- [Denmark](#)
- [Estonia](#)
- [Finland](#)
- [France](#)
- [Germany](#)
- [Greece](#)
- [Hungary](#)
- [Iceland](#)
- [Ireland](#)
- [Italy](#)
- [Latvia](#)
- [Lithuania](#)
- [FYR of Macedonia](#)
- [Republic of Moldova](#)
- [The Netherlands](#)
- [Norway](#)
- [Poland](#)
- [Portugal](#)
- [Romania](#)
- [Russia](#)
- [Slovakia](#)
- [Slovenia](#)
- [Spain](#)
- [Sweden](#)
- [Switzerland](#)
- [Turkey](#)
- [Ukraine](#)
- [United Kingdom](#)
- [Yugoslavia](#)
- [Stations in former Soviet Union](#)
- [Stations in former Yugoslavia](#)

Daily values Monthly means Annual means Station name

Austria
[AT02, model](#) [AT02](#) [AT02](#) Illmitz
[AT03, model](#) [AT03](#) [AT03](#) Achenkirch
[AT04, model](#) [AT04](#) [AT04](#) St. Koloman
[AT05, model](#) [AT05](#) [AT05](#) Vorhegg

Belgium
[BE01, model](#) [BE01](#) [BE01](#) Offagne

Belarus
[BY04, SU04, model](#) [BY04, SU04](#) [BY04, SU04](#) Vysokoe

Bosnia Hercegovina



daily values NO01 1977-1998

Year	month	day	jday	mm	flag mm	mm off	flag mm off	pH	flag pH	SO4	flag SO4	xSO4
1977	10	1	274	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	2	275	3.80	0000000000	-999.90	9990000000	5.50	0000000000	0.20	0000000000	0.16
1977	10	3	276	3.60	0000000000	-999.90	9990000000	4.75	0000000000	0.28	0000000000	0.24
1977	10	4	277	13.40	0000000000	-999.90	9990000000	4.60	0000000000	0.32	0000000000	0.29
1977	10	5	278	0.50	0000000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	6	279	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	7	280	13.10	0000000000	-999.90	9990000000	4.45	0000000000	0.65	0000000000	0.63
1977	10	8	281	20.00	0000000000	-999.90	9990000000	4.20	0000000000	1.40	0000000000	1.38
1977	10	9	282	2.90	0000000000	-999.90	9990000000	4.00	0000000000	2.80	0000000000	2.72
1977	10	10	283	6.80	0000000000	-999.90	9990000000	4.15	0000000000	1.25	0000000000	1.14
1977	10	11	284	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	12	285	8.30	0000000000	-999.90	9990000000	4.15	0000000000	1.82	0000000000	1.61
1977	10	13	286	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	14	287	3.80	0000000000	-999.90	9990000000	3.95	0000000000	2.00	0000000000	1.78
1977	10	15	288	1.00	0000000000	-999.90	9990000000	3.45	0000000000	4.75	0000000000	-999.90
1977	10	16	289	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	17	290	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	18	291	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	19	292	1.30	0000000000	-999.90	9990000000	3.30	0000000000	6.50	0000000000	6.31
1977	10	20	293	8.30	0000000000	-999.90	9990000000	3.80	0000000000	2.70	0000000000	2.68
1977	10	21	294	6.80	0000000000	-999.90	9990000000	4.00	0000000000	1.75	0000000000	1.73
1977	10	22	295	16.90	0000000000	-999.90	9990000000	4.20	0000000000	1.05	0000000000	1.04
1977	10	23	296	4.30	0000000000	-999.90	9990000000	4.30	0000000000	0.80	0000000000	0.77
1977	10	24	297	3.00	0000000000	-999.90	9990000000	4.50	0000000000	1.05	0000000000	0.93
1977	10	25	298	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	26	299	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	27	300	0.80	0000000000	-999.90	9990000000	3.80	0000000000	3.90	0000000000	3.49
1977	10	28	301	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90
1977	10	29	302	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90	9990000000	-999.90

Transfer file formats

CCC have developed software for creating NASA/Ames files ([ge_nas.xls](#) and [2nasa](#)) and quality control of EMEP data (EDC). The software is available online.

[Download software](#)

[List of flags used in the EMEP data base](#)

[Data Quality Objectives](#)

NASA/Ames 1001 format and metadata description

This PowerPoint presentation describes all elements of the NASA/Ames 1001 format, based on the original description by Gaines and Hipskind. We create the files compatible with the original definition, but add some requirements to ensure consistency between files created by different data originators, and to include the required metadata elements in the files.

Please bookmark this page for quick return from the online PowerPoint presentations.

- [View the format presentation online](#) (Internet Explorer)
- [Download the format presentation](#) (PowerPoint, 57K)

A separate presentation describes the specific EBAS metadata section which is implemented as a block of comment lines inside the NASA/Ames 1001 file format. The presentation defines allowed values and required formatting for several metadata elements.

- [View the metadata presentation online](#) (Internet Explorer)
- [Download the metadata presentation](#) (PowerPoint, 33K)

Common formatting problems

Please try to avoid the following common problems:

- [ge_nas7_990706x.zip](#) (155K)

2nasa

Software to convert data files to NASA/Ames 1001 files. Reads old EMEP forms and text files with data in columns.

- [Description of 2nasa](#)
- [2nasa](#) DOS executable (67K)
- [Source code](#) Tar/unix compress (155K)

EDC - EMEP Data Check

Software for quality control of EMEP data. Checks ion balance, conductivity, outliers etc. EDC uses [gnuplot](#) for graphical output (time series). Gnuplot is copyrighted but freely distributed and can be downloaded with anonymous ftp from nic.funet.fi/pub/msdos/windows/util/wgnuplot.zip.

Please note that the first two files should be downloaded in order to run EDC with outlier tests.

- [EDC](#) DOS executable (72K)
- [Seasonal statistics 1996-1998](#) (105K)
- [Monthly mean values 1978-1998](#) (617K)
- [Source code](#) Tar/unix compress (30K)
- [Example files in NASA/Ames](#)(48K)

[Home](#)

Last updated: February 10, 2000

EMEP contact person: [Anne-Gunn Hjellbrekke](#)

CAMP contact person: [Terje Krognnes](#)

EMEP/CCC

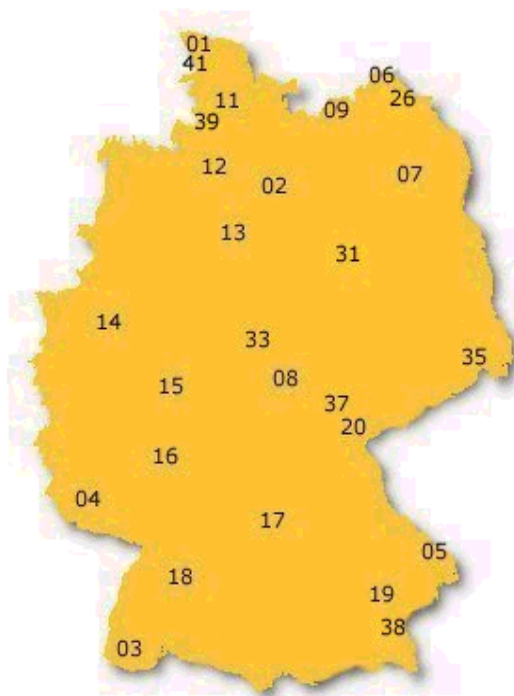
- Austria
- Belarus
- Belgium
- Bosnia Hercegovir
- Croatia
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- FYROM
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Norway
- Poland
- Portugal
- Republic of Moldo
- Romania
- Russia
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- The Netherlands
- Turkey
- Ukraine
- United Kingdom
- Yugoslavia



Germany

EMEP/CCC

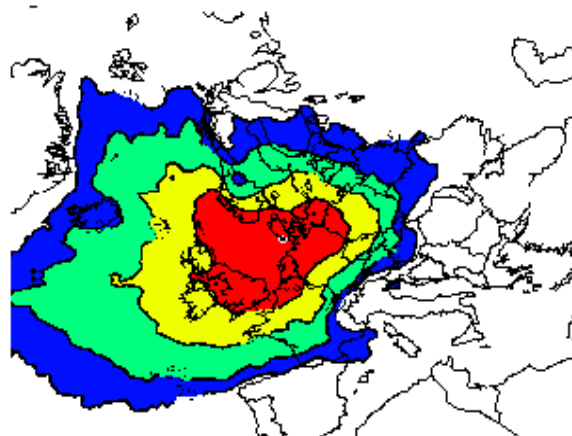
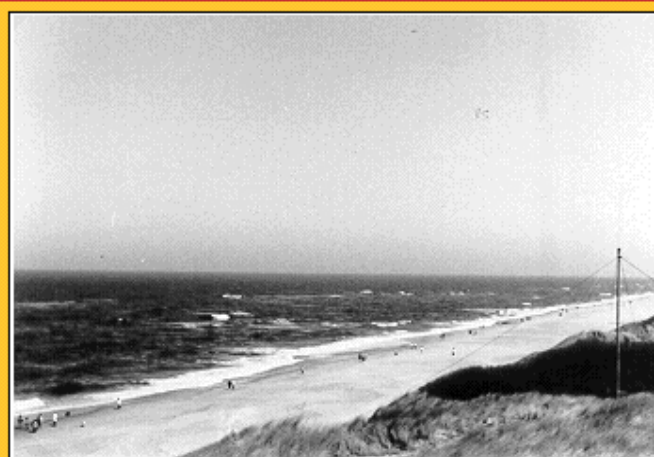
- [DE01 Westerland/](#)
- [Wenningstedt](#)
- [DE02 Langenbrügge/](#)
- [Waldhof](#)
- [DE03 Schauinsland](#)
- [DE04 Deuselbach](#)
- [DE05 Brotjackriegel](#)
- [DE06 Akrona](#)
- [DE07 Neuglobsow](#)
- [DE08 Schmücke](#)
- [DE09 Zingst](#)
- [DE11 Hohenwestedt](#)
- [DE12 Bassum](#)
- [DE13 Rodenberg](#)
- [DE14 Meinerzhagen](#)
- [DE15 Usingen](#)
- [DE16 Bad Kreuznach](#)
- [DE17 Ansbach](#)
- [DE18 Rottenburg](#)
- [DE19 Starnberg](#)
- [DE20 Hof](#)
- [DE26 Ückermünde](#)
- [DE31 Wiesenburg](#)
- [DE33 Herleshausen](#)
- [DE35 Lückendorf](#)
- [DE37 Schleiz](#)
- [DE38 Murnauer Moos](#)
- [DE39 Aukrug](#)
- [DE41 Westerland/](#)
- [Tinum](#)



[All countries](#)

Germany
EMEP/CCC[DE01 Westerland/](#)[Wenningstedt/](#)[DE02 Langenbrügge/](#)[Waldhof](#)[DE03 Schauinsland](#)[DE04 Deuselbach](#)[DE05 Brotjacklriegel](#)[DE06 Akrona](#)[DE07 Neuglobsow](#)[DE08 Schmücke](#)[DE09 Zingst](#)[DE11 Hohenwestedt](#)[DE12 Bassum](#)[DE13 Rodenberg](#)[DE14 Meinerzhagen](#)[DE15 Usingen](#)[DE16 Bad Kreuznach](#)[DE17 Ansbach](#)[DE18 Rottenburg](#)[DE19 Starnberg](#)[DE20 Hof](#)[DE26 Ückermünde](#)[DE31 Wiesenburg](#)[DE33 Herleshausen](#)[DE35 Lückendorf](#)[DE37 Schleiz](#)[DE38 Murnauer Moos](#)[DE39 Aukrug](#)[DE41 Westerland/](#)[Tinnum](#)[All countries](#)

Measurement site: **Westerland/Wenningstedt**
 Country: Germany
 Code: DE01
 Database code: DE0001R
 Geographical coordinates: 54° 56'N, 08° 19'E
 EMEP coordinates (50 km): 91.60, 63.73
 Altitude above sea level: 12
 In operation since: October 1977
 Closest climatological station: List/Sylt
 Main wind direction: South West
 Contact person: Karin Uhse
 Organisation: Umweltbundesamt



Maps from

Measurement programme

<i>Components</i>	<i>Current methods</i>	<i>Time res.</i>	<i>Period</i>
Air			
Ozone	UV abs.	1 h	1988->
SO ₂	filterpack	24 h	1977->
SO ₄	filterpack	24 h	1978->
NO ₂	Absorbing solution	24 h	1977->
Mn, Fe, Ni, Cu, Cd, Pb	ICP-MS	1 m	1987->

Germany

EMEP/CCC

[DE01 Westerland/
Wenningstedt](#)
[DE02 Langenbrügge/
Waldhof](#)
[DE03 Schauinsland](#)
[DE04 Deuselbach](#)
[DE05 Brotjackriegel](#)
[DE06 Akkona](#)
[DE07 Neuglobsow](#)
[DE08 Schmücke](#)
[DE09 Zingst](#)
[DE11 Hohenwestedt](#)
[DE12 Bassum](#)
[DE13 Rodenberg](#)
[DE14 Meinerzhagen](#)
[DE15 Usingen](#)
[DE16 Bad Kreuznach](#)
[DE17 Ansbach](#)
[DE18 Rottenburg](#)
[DE19 Starnberg](#)
[DE20 Hof](#)
[DE26 Ückermünde](#)
[DE31 Wiesenburg](#)
[DE33 Herleshausen](#)
[DE35 Lückendorf](#)
[DE37 Schleiz](#)
[DE38 Murnauer Moos](#)
[DE39 Aukrug](#)
[DE41 Westerland/
Tinum](#)

[All countries](#)

Surroundings

Westerland (~10 000 inhab.) 2 km to E/S.
There are 13 600 cars registered on the island and in the months 6-9 there are 200 000 cars.

Land use (%)

Built-up area		25
Forest	<i>coniferous</i>	10
	<i>deciduous</i>	5
Bog and heather		10
Grassland		
Farmland	<i>grass and pasture</i>	
	<i>cereals</i>	
	<i>other crops</i>	
Water surface		40
Other	<i>sand</i>	10

Time series from Westerland: [daily](#) [monthly](#) [annual](#).
Overview of methods for sampling and analysis.
[Detailed reports from Germany, including emissions.](#)



EMEP manuals

EMEP manual for measurements of PM10 and chemical speciation of aerosol particles

Draft version

- [Download pdf version](#) (239K)
- [Download Word 97 version](#) (281K)

EMEP manual for sampling and chemical analysis of heavy metals

Draft version. To be finalized after [TFMM meeting in Slovenia, May 2001](#)

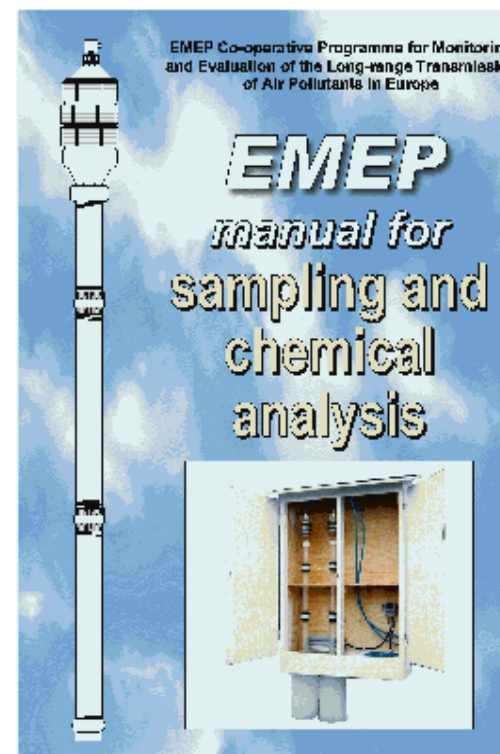
- [Download pdf version](#) (368K)
- [Download Word 97 version](#) (zipped, 97K)

EMEP guidelines for the sampling and analysis of mercury in air and precipitation

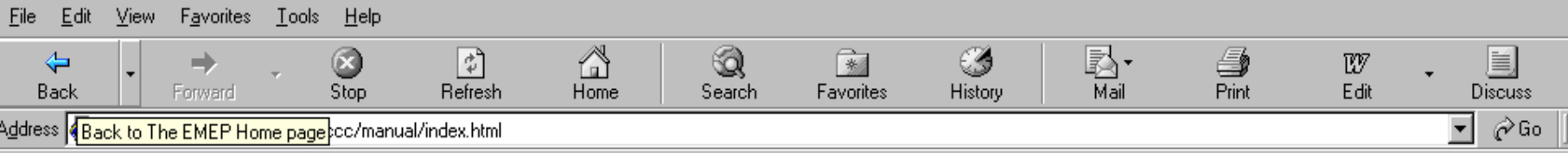
Draft version. To be finalized after [TFMM meeting in Slovenia, May 2001](#)

- [Download pdf version](#) (246K)
- [Download Word 97 version](#) (zipped, 55K)

Measurements of persistent organic pollutants (pesticides and PCB) in air



EMEP/CCC report 1/95



Measurements of persistent organic pollutants (pesticides and PCB) in air

This is the complete SOP as used by the Norwegian Institute for Air Research (NILU).

- [Download pdf version](#) (925K)
- [Download Word version](#) (zipped, 226K)

Measurement of polycyclic aromatic hydrocarbons (PAH) in air

This is the complete SOP as used by the Norwegian Institute for Air Research (NILU).

- [Download pdf version](#) (876K)
- [Download Word version](#) (zipped, 249K)

EMEP manual for sampling and analysis

The EMEP manual describes the standard recommended methods for sampling and chemical analysis for the EMEP measurement network. The methods and procedures are generally derived from the development and experience gained within EMEP as well as information provided by similar programmes in North America, WMO, various research programmes and numerous EMEP workshops.

- [Chapter 1 and 2: Introduction; Siting criteria](#) (pdf, 458K)
- [Chapter 3: Sampling methods](#) (revised preliminary version) (pdf, 855K)
- [Chapter 4: Chemical analysis](#) (pdf, 2.6MB)
- [Chapter 5 and 6: Quality assurance; Data handling and data reporting](#) (pdf, 136K)

Relevant links:

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address <http://www.nilu.no/projects/ccc/reports.html#workshop> Go

Workshop reports

EMEP expert meeting on chemical matters. Oslo, 3-5 December 1979

NILU CCC 4/79

EMEP expert meeting on chemical matters, Geneva 10 - 12 March 1982

NILU CCC 1/82

EMEP workshop on heavy metals. Lillestrøm, Norway 27-29 August 1984.

NILU CCC 4/84

EMEP Workshop on heavy metals, Lillestrøm, Norway 27th - 29th August 1984. Papers presented at the workshop.

NILU CCC 3/85

EMEP-workshop on data analysis and presentation. Cologne, Federal Republic of Germany 15th-17th June 1987.

NILU CCC 7/87

Pacyna J M

Proceedings of the EMEP workshop on emission inventories techniques Cologne (FRG), 17-19 May, 1988.

NILU CCC 2/88

Nodop K, Leyendecker W

Expert meeting on sampling, chemical analysis and quality assurance, Arona, Italy, 11 to 14 October 1988.

NILU CCC 4/88

EMEP Workshop on measurement of hydrocarbons/VOC. Lindau, Federal Republic of Germany, November 6-9, 1990

NILU CCC 3/90

Pacyna J M, Joerss K E

Proceedings of the workshop on international emission inventories, Regensburg, Federal Republic of Germany, 3-6 July, 1990.

NILU CCC 7/90

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address <http://www.nilu.no/projects/ccc/reports.html#workshop> Go

Pacyna J M, Joeress K E

Proceedings of the EMEP workshop on emission inventory techniques, Regensburg, Germany, 2-5 July, 1991.

NILU CCC 1/91

Hanssen J E, Nodop K

EMEP workshop on quality and comparability of atmospheric measurement data. Weilrod-Neuweilnau, Federal Republic of Germany, 22-24 April 1991.

NILU CCC 5/91

McInnes G, Pacyna J M, Dovland H

Proceedings of the first meeting of the task force on emission inventories, London, United Kingdom 5-7 May, 1992.

NILU CCC 4/92

Ballaman R, Gehrig R, Kvalvågnes I M, Schaug J

EMEP workshop on measurements of nitrogen-containing compounds. Les Diablerets, Switzerland, 30 June - 3 July 1992.

NILU CCC 1/93

Pacyna J M, Voldner E, Keeler G J, Evans G

Proceedings of the first workshop on emissions and modelling of atmospheric transport of persistent organic pollutants and heavy metals. US.EPA, Durham, NC.

6-7 May, 1993.

NILU CCC 7/93

McInnes G, Pacyna J M, Dovland H

Proceedings of the second meeting of the task force on emission inventories, Delft, The Netherlands 7-9 June, 1993.

NILU CCC 8/93

Berg T, ed. Schaug J, ed.

EMEP workshop on the accuracy of measurements with WMO-sponsored sessions on Determining the Representativeness of measured parameter in a given grid square as compared to model calculations, Passau 1993.

NILU CCC 2/94

Expert meeting on EMEP VOC measurements Berlin, Germany, 30 November - 2 December 1994.

NILU CCC 8/93

Berg T, ed. Schaug J, ed.

EMEP workshop on the accuracy of measurements with WMO-sponsored sessions on Determining the Representativeness of measured parameter in a given grid square as compared to model calculations, Passau 1993.

NILU CCC 2/94

Expert meeting on EMEP VOC measurements Berlin, Germany, 30 November - 2 December 1994.

NILU CCC 6/95

EMEP workshop on quality assurance of measurements Berlin, Germany, November 20 - 23, 1995

NILU CCC 3/96

Schaug J, ed.

EMEP-WMO workshop on data analysis, validation and reporting. Usti nad Labem, Czech Republic, April 27-30, 1997.

NILU CCC 6/97

Schaug J, ed. Uhse K, ed.

EMEP-WMO Workshop on strategies for monitoring the regional air pollution in the relation to the need within EMEP, GAW and other international bodies, Aspenås Herrgård, Lerum, Sweden June 2-4, 1997.

NILU CCC 10/97

Phase reports

Summary report from the chemical co-ordinating centre for the first phase of EMEP

NILU CCC 4/80

Schaug J

Summary report from the chemical co-ordinating centre for the second phase of EMEP

NILU CCC 4/83

Schaug J