

2. General Information

Models. Computations of the 1998 nitrogen depositions were performed at MSC-W with the EMEP Eulerian Acid Deposition model with a 50 km resolution. Depositions of Pb, Cd and Hg were calculated with the Eulerian Heavy Metal model (50 km resolution), and deposition of Lindane was calculated with the Eulerian POP model (150 km resolution), both developed and run at MSC-E. Most of the up-to-date information about the EMEP models and their results can be found on internet at: <http://www.emep.int>. Model domain is shown in Figure 2.1 (page 2).

Meteorological input. Meteorological Weather Prediction Model (NWP) and its application to create meteorological input data for the EMEP Eulerian Acid Deposition model is described in detail in Lenschow and Tsyro (2000). Currently, the so called PARLAM-PS NWP model is used to compute meteorological input data for the Eulerian air pollution models at MSC-W. PARLAM is a parallel version of HIRLAM (High Resolution Limited Area Model) and PS stands for Polar Stereographic projection. The NWP model domain is compatible with the domain of the air pollution model. Temporal resolution of the meteorological input for the EMEP Eulerian Acid Deposition model is three hours.

In the computations of heavy metals and lindane depositions for 1998 and 1997, meteorological data prepared by the Hydro-meteorological Centre of the Russian Federation were used. These data contain wind speed components and temperature at the levels of 1000, 925, 850 and 700 hPa, cloudiness and precipitation amount. The data on wind and temperature are presented as instantaneous values of middle points of four main meteorological periods (3, 9, 15, 21 UTC). Precipitation data represent total values during six hours of the same four meteorological periods. A detailed procedure for preparation of meteorological data is described in (Frolov *et al.*, 1994).

Sub-basins and catchments of the Baltic Sea. The sub-basins and catchments of the Baltic Sea used in 1998 computations were suggested during the Fourth TC Input Meeting in Gothenbourg (19-23 April, 1999) and are presented in Table 2.1 (page 3). Geographical coordinates corresponding to each sub-region have been provided by the Finnish Environment Agency (Kotilainen, 1998). The division of the Baltic Proper (BAP) catchment into the Northern Baltic Proper (BPN) and the Southern Baltic Proper (BPS) has not yet been supplied to EMEP. The border lines as currently available to EMEP are shown in Figure 2.2 (page 4). That between the north and south Baltic Proper catchments is only an approximation, and was not used in the 1998 calculations. The North Baltic Proper and South Baltic Proper sub-basins, however, were distinguished in calculations.

Country codes. The acronyms of the EMEP countries and other regions are used in different places in this report. The definitions of the country codes as well as other emitters/receptors used within the EMEP Programme are given in Table 2.2 (page 5).

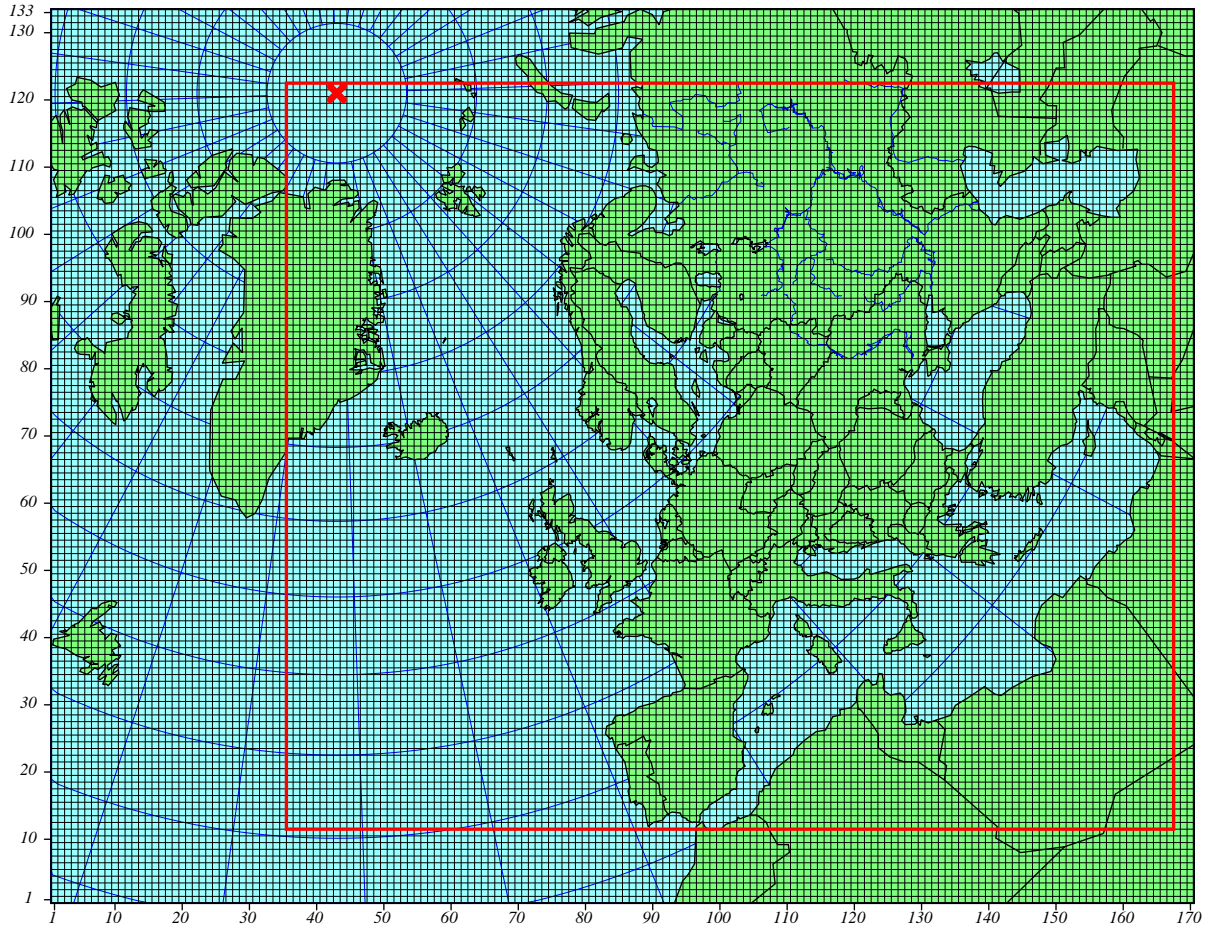


Figure 2.1. Model domain and a grid system with a 50 km resolution used for computing nitrogen deposition at MSC-W (the entire area) and heavy metals deposition at MSC-E (area within the thick frame) for 1998. The area within the thick frame is the official EMEP domain where all annual depositions are routinely calculated.

Table 2.1. Areas, in km², of sub-basins and catchments of the Baltic Sea for which 1998 depositions are computed.

Sub-region	Abbreviation	Sub-basin	Catchment
1. GULF OF BOTHNIA	GUB	116 986	492 827
1.1 Bothnian Bay	BOB	37 900	263 701
1.2 Bothnian Sea	BOS	68 072	218 886
1.3 Archipelago Sea	ARC	11 015	10 240
2. GULF OF FINLAND	GUF	30 027	420 558
3. GULF OF RIGA	GUR	18 475	138 509
4. BALTIC PROPER	BAP	211 281	558 159
4.1 Northern Baltic Proper	BPN	114 312	
4.2 Southern Baltic Proper	BPS	96 969	
5. BELT SEA	BSK	43 833	129 337
5.1 Belt Sea	BES	20 524	111 639
5.1.1 Western Baltic and Belts	WEB	18 516	21 658
5.1.2 The Sound	SOU	2 008	4 477
5.2 The Kattegat	KAT	23 309	85 504
BALTIC SEA	BAS	420 603	1 721 692

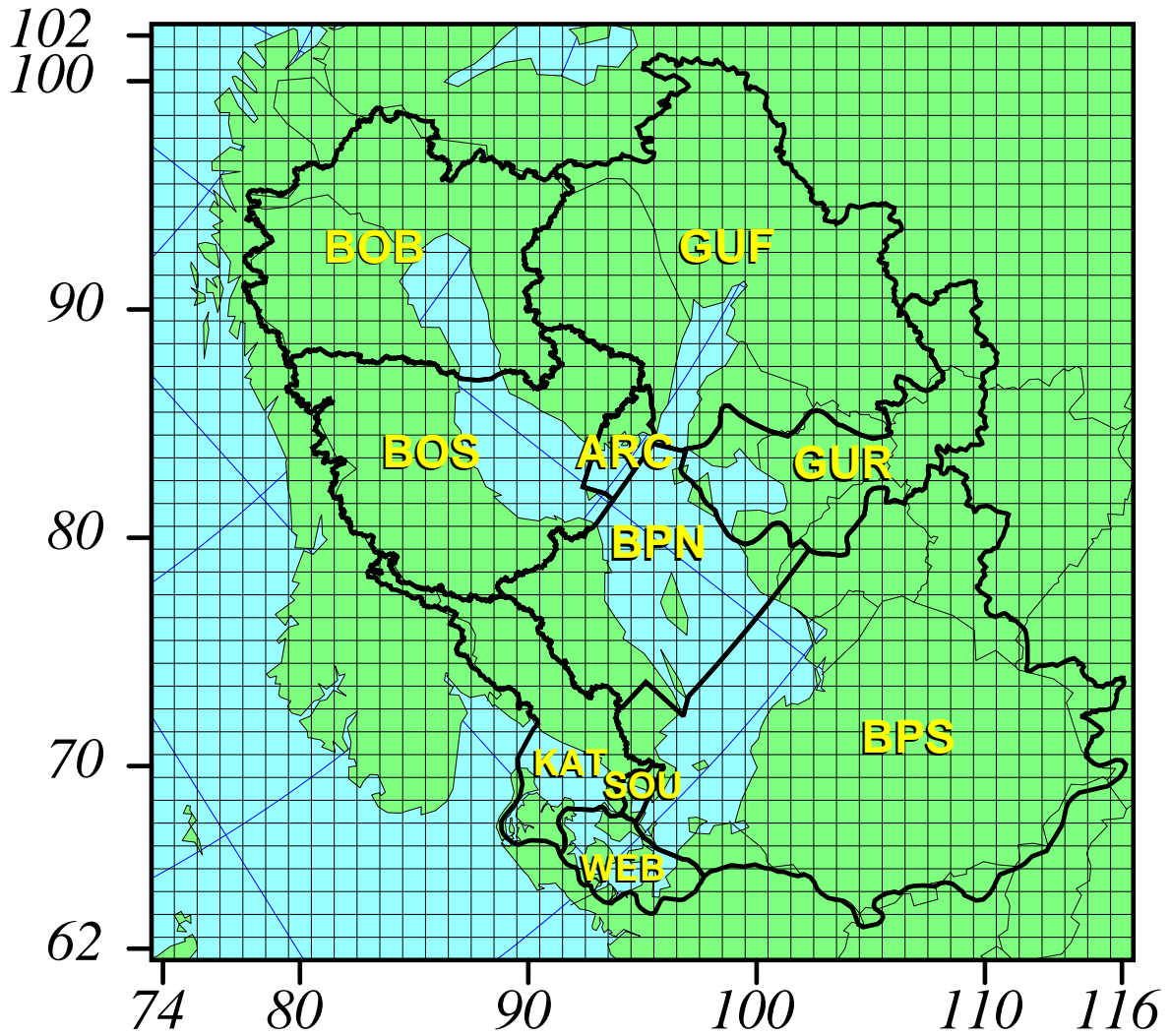


Figure 2.1. The border lines of sub-regions of the Baltic Sea currently available at MSC-W. Only the part of the border line between the Northern Baltic Proper (BPN) sub-basin and the Southern Baltic Proper (BPS) sub-basin is used in the 1998 computations.

Table 2.2. Codes of the European countries, as well as other emitters/receptors used within the EMEP Programme

Code	Name	Code	Name
AL	Albania	RU	Russian Federation
AM	Armenia	SK	Slovakia
AT	Austria	SI	Slovenia
BY	Belarus	ES	Spain
BE	Belgium	SE	Sweden
BA	Bosnia and Hercegovina	CH	Switzerland
BG	Bulgaria	MK	The former Yugoslav Republic of Macedonia
HR	Croatia	TR	Turkey
CY	Cyprus	UA	Ukraine
CZ	Czech Republic	GB	United Kingdom
DK	Denmark	YU	Yugoslavia
EE	Estonia	EU	European Community
FI	Finland	BAS	Baltic Sea
FR	France	BLS	Black Sea
GE	Georgia	MED	Mediterranean Sea
DE	Germany	NOS	North Sea
GR	Greece	ATL	Remaining North-East Atlantic Ocean
HU	Hungary	BIC	Boundary and initial conditions
IS	Iceland	NAT	Natural marine emissions
IE	Ireland	NOA	North Africa
IT	Italy	ASI	Remaining Asian areas
KZ	Kazakhstan	REM	Remaining Land Areas
LV	Latvia	SUM	Sum of all attributable sources
LT	Lithuania	VOL	Volcanic emissions
LU	Luxembourg	FCS	Former Czechoslovakia
MT	Malta	FFR	Former Federal Republic of Germany
NL	Netherlands	FGD	Former German Democratic Republic
NO	Norway	FSU	Former USSR
PL	Poland	RUA	Kaliningrad
PT	Portugal	RUO	Kola/Karelia
MD	Republic of Moldova	RUP	St.Petersburg/Novgorod-Pskov
RO	Romania	RUR	Rest of the Russian Federation