Copyright ©

In: Second study conference on the Baltic Sea Experiment. , 25.-29.05.1998, Geesthacht, Germany . Conference Proceedings of the Second Study Conference on BALTEX. ; p. 198

THE BALTEX FIELD EXPERIMENTS – AN OVERVIEW

Ruprecht, E., Institut für Meereskunde, D-24105 Kiel, Germany, e-mail: eruprecht@ifm.uni-kiel.de

The BALTEX scientific objective to "explore and model the various mechanisms determining the space and time variability of energy and water budgets" needs special efforts to trace down the relevant processes and to develop strategies for their observations. The very complex structure of the BALTEX region leads to processes which are unique in this area e.g. saltwater intrusion through the Danish Straits and its distribution into the different basins or to processes which are typical for an area with large spatial inhomogenities e.g. land-sea breeze circulations or cold air outbreaks. Since such processes in general are not fully resolved in the numerical models their effects must be parameterized. Thus, validation of the current parameterization schemes is an additional objective of process studies.

The Initial Implemention Plan proposes four field experiments of first priority which fulfill the mentioned tasks:

- Cloud / Precipitation / Air-Sea Interaction Experiment
- Cloud / Precipitation / Air-Land Surface Experiment
- Atmosphere-Ice-Ocean Experiment
- Baltic Sea Vertical Advection and Mixing Experiment

Two problems stand out for the experiments

- interaction between the different components: atmosphere, sea, ice and land surface;
- convection and mixing, including cloud and precipitation and turbulent fluxes at interfaces or within the sea.

From the viewpoint of numerical modelling asked the first for coupled models and the later for sufficient parameterization schemes. Thus, field experiments and numerical experiments must work together very closely to be successful.

Four field experiments are now underway

- Pilotstudy of Evaporation and Precipitation in the Baltic Sea (PEP in BALTEX)
- Lindenberg field campaigns
- Baltic Air-Sea-Ice Study (BASIS)
- Dynamics of Wind-forced Diapycnal Mixing in the Statified Ocean (DIAMIX)

Their importants for BALTEX and in particular for the different models are discussed.