Optimum Interpolation Laboration

Install

> tar xvf ”tar-file”
> cd analab
>./anainstall (compiles the code)

Running

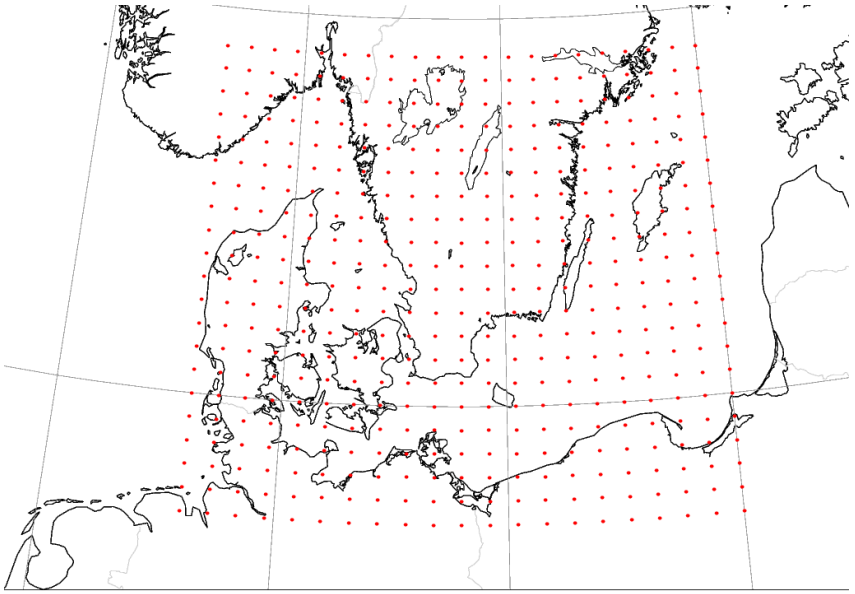
In directory exp

>./analysis (Performs the analysis)
Output:
* POST: PS file with analysis of temperature
* fort.21: 1:st guess field
* fort.22: analysis field
* yymmddhh.EXP analysis + observations (used by the plot program)

>./mappt
Output:
POST PS file with MSLP and temperature plots

Edit changes in ’params.dat’

The domain



Method

Background error covariance between observation points

Analysis field (**pressure and temperature**)

Observation errors

$$x_a = x_b + BH^T \left(HBH^T + R \right)^{-1} \left(y - Hx_b \right)$$

1:st guess

Background error covariance between grid-points and observation points

Observations

Interpolation

Assumptions

Diagonal R matrix (observation errors uncorrelated)

$$B_{mn} = {}_{b}e^{-\left(\frac{r_{mn}}{L}\right)^2}$$

Background errors described by an analythical exponential formula

No multivariate relationships (no cross-correlation between P and T)