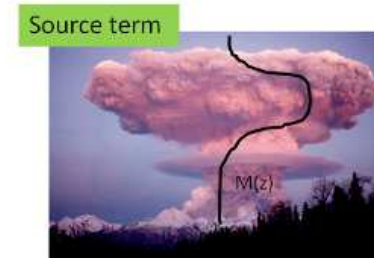
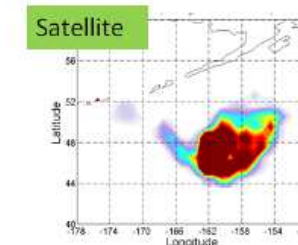
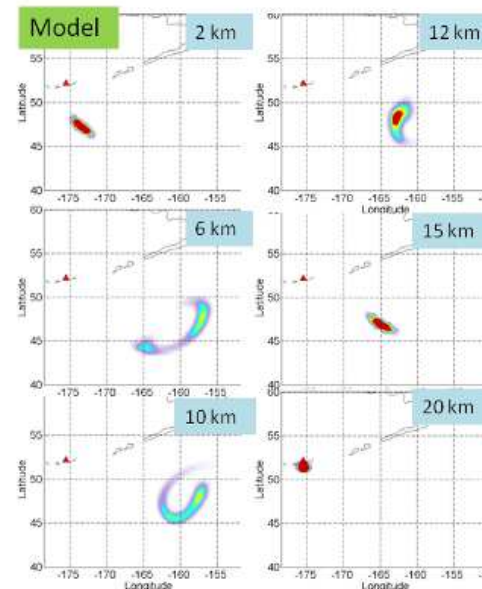
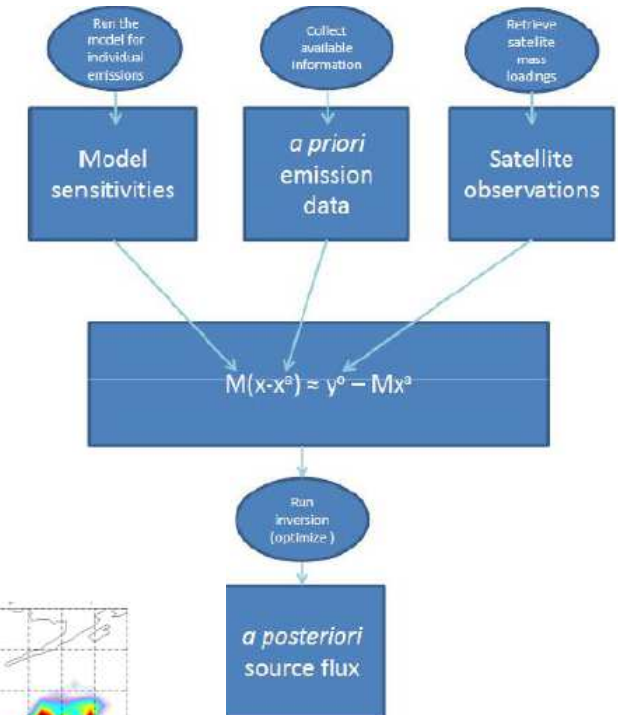
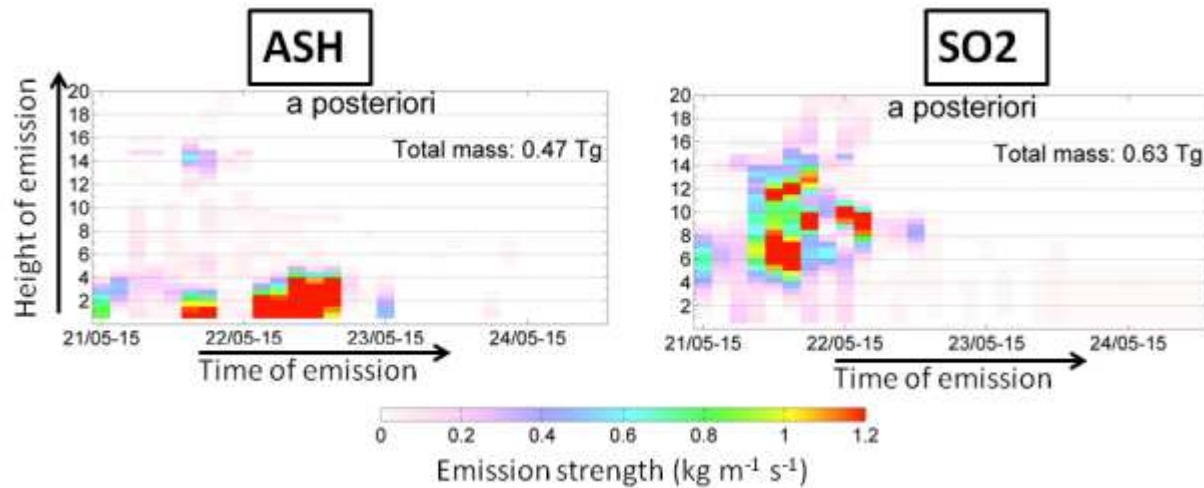


# **Basic Inverse Modelling aspects**

- Inverse modelling for volcanic ash and SO<sub>2</sub> using a Bayesian approach (same approach as for NPP accident inversions):
  - Observational data: satellite data – ash load for bin sizes lower than 25 µm and SO<sub>2</sub>
  - FLEXPART runs to obtain the SRS (SRM, Model sensitivities, TCM...) fields - one unit run per elevation and time interval
  - A priori: database, observational data (ie. Height of column ...)



From N. I. Kristiansen, vast.nilu.no

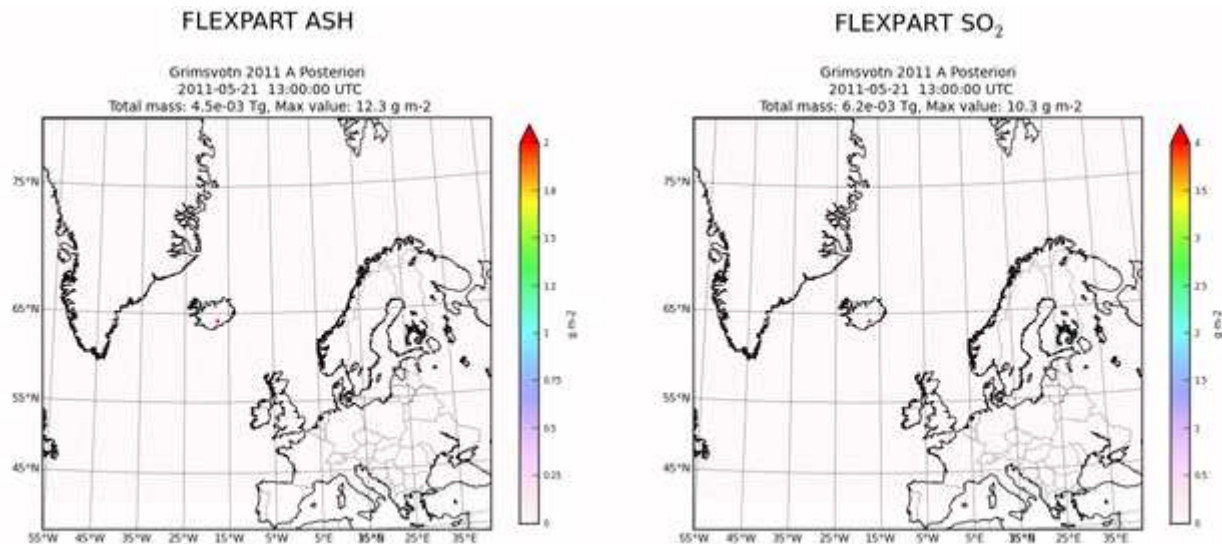


Source term “forensics”:

- Ash /SO2 emission (vertical profile with time)



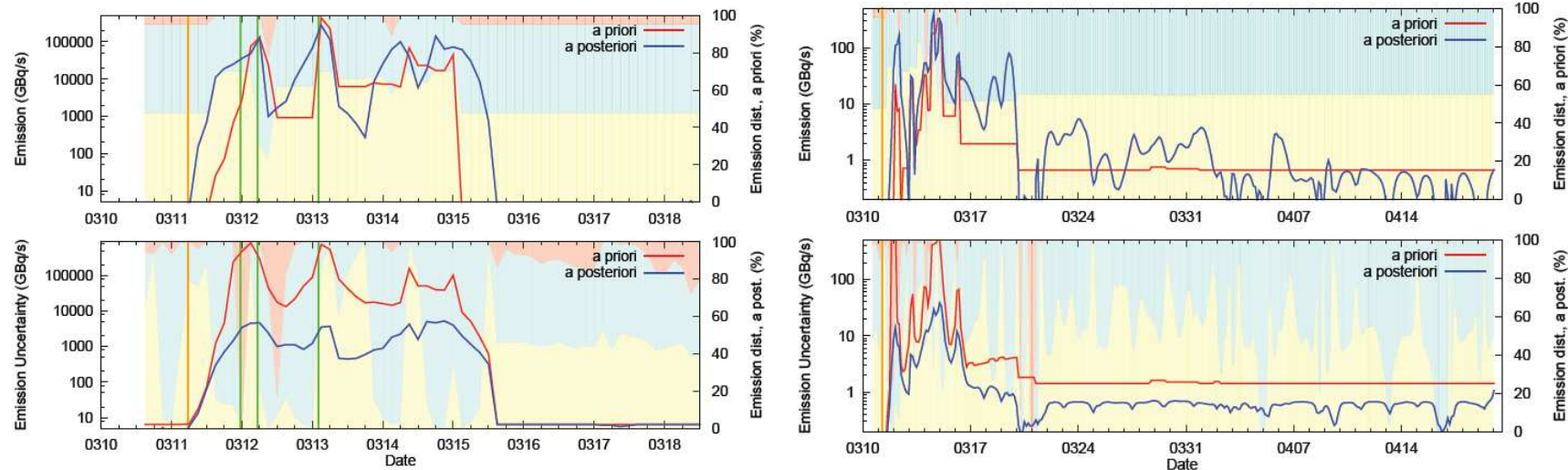
Forecast with the estimated ST



From N. I. Kristiansen, [vast.nilu.no](http://vast.nilu.no)

## ■ Source term:

- Nuclear accident: known location, uncertain emission time, strength, release shape and radionuclide mixture.



- Volcanic emissions: known location, known (under some circumstances) emission time, uncertain emission height, strength, time evolution, ash particle size distribution (volcano dependent).
- Anthropogenic emission inventories (bottom-up, top down) relying on relatively sparse measurements (errors on the observations), on state members information, ...