

## 2011 TM5 Forecasting Activities at KNMI

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# INTRO

## Events

- Fukushima Nuclear explosion (March)
- Grímsvötn volcano (May)

## Forecasting Common Features

- TM5 trunk using the latest PyCASSO
  - switch to GRIB-2
- hi-res zoom regions
- driven by ECWF forecast met fields
  - T319/N160, resolution  $\sim 0.5625$
- fully automatic:
  - every evening of day0, runs for [days0-day0+3[

## FUKUSHIMA (March 2011)

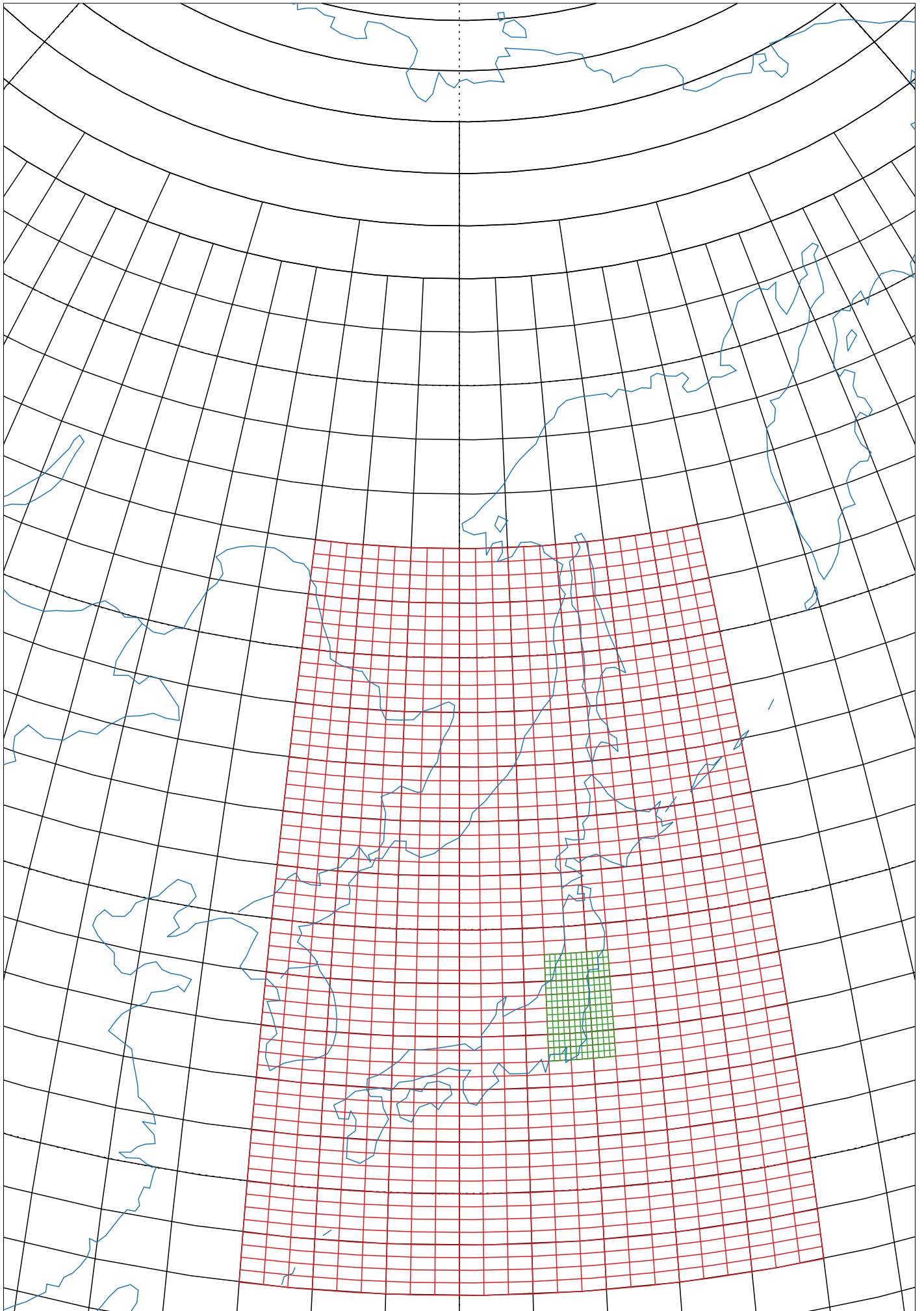
### source

- nuclear accident
- one transient release (for 1h, March 15)
- one continuous leaking (40 times less, all the time)
- vertical distribution : into first 3 levels (40%, 40%, 20%)

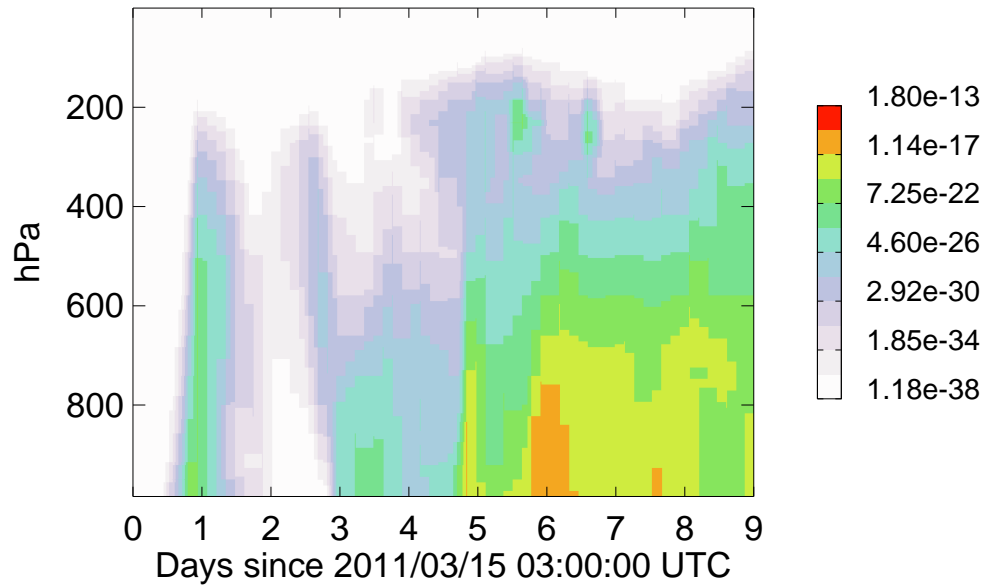
## FUKUSHIMA (March 2011)

### other settings

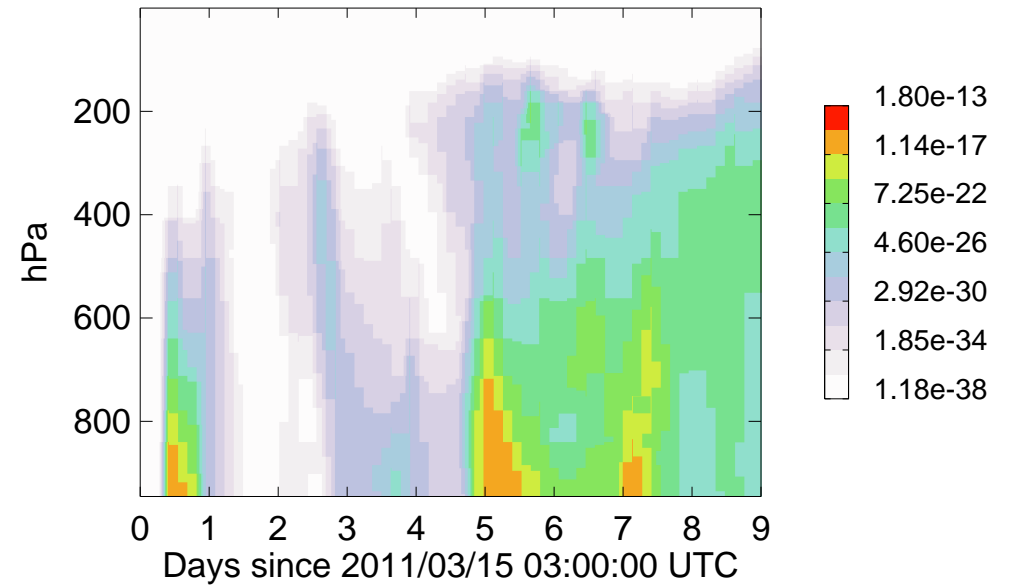
- 3 regions
  - global 3x2
  - japanese 1x0.5
  - vicinity of source 0.25x0.25
- 2 tracers -> distinguish sources
- Wet deposition, but **no** sedimentation/drydep
- operational until end of April (>1 month)
- 5h/evening (2 MPI, 8 openMP)



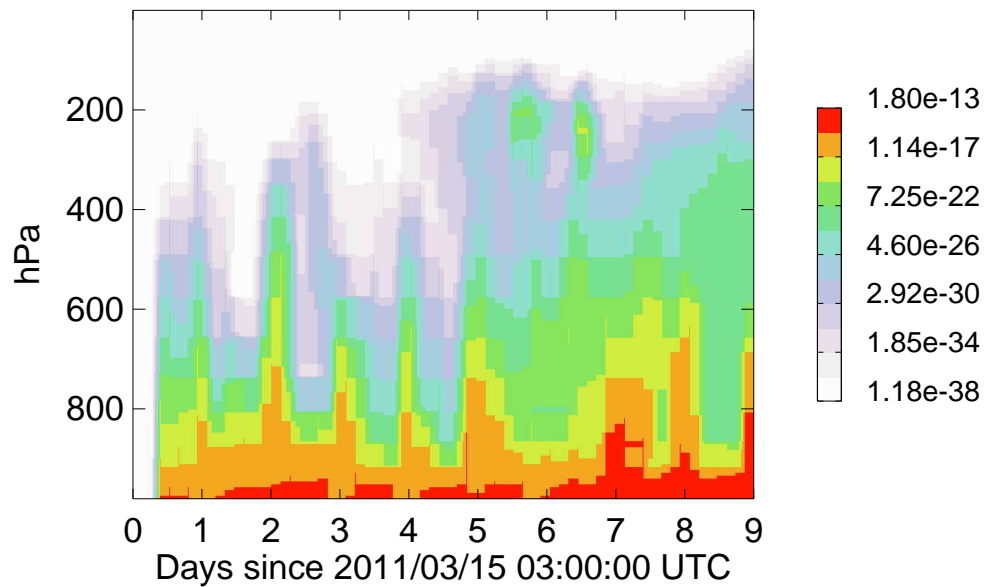
TOKYO (N35.70, E139.75)



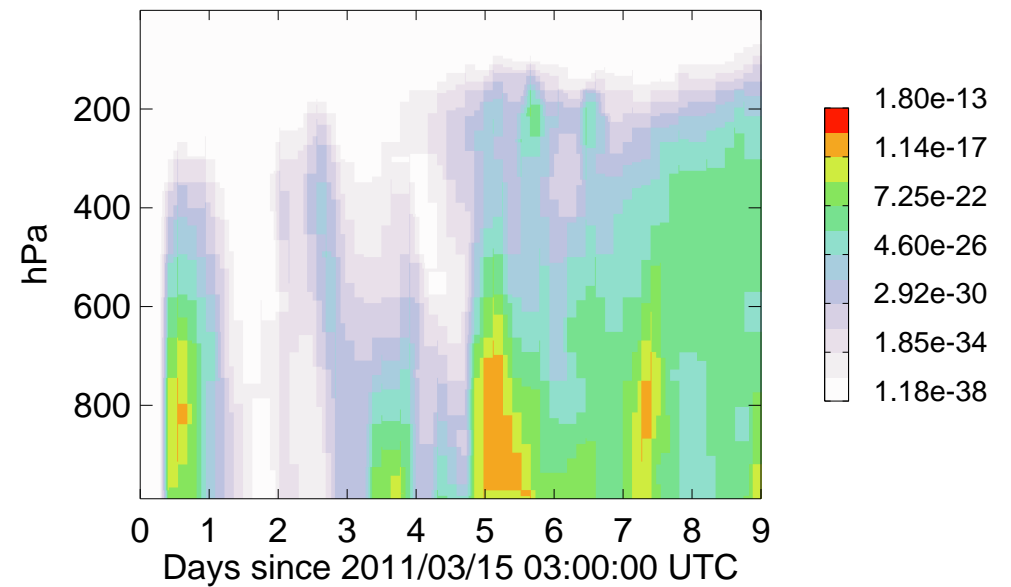
FUKUSHIMA (N37.75, E140.50)



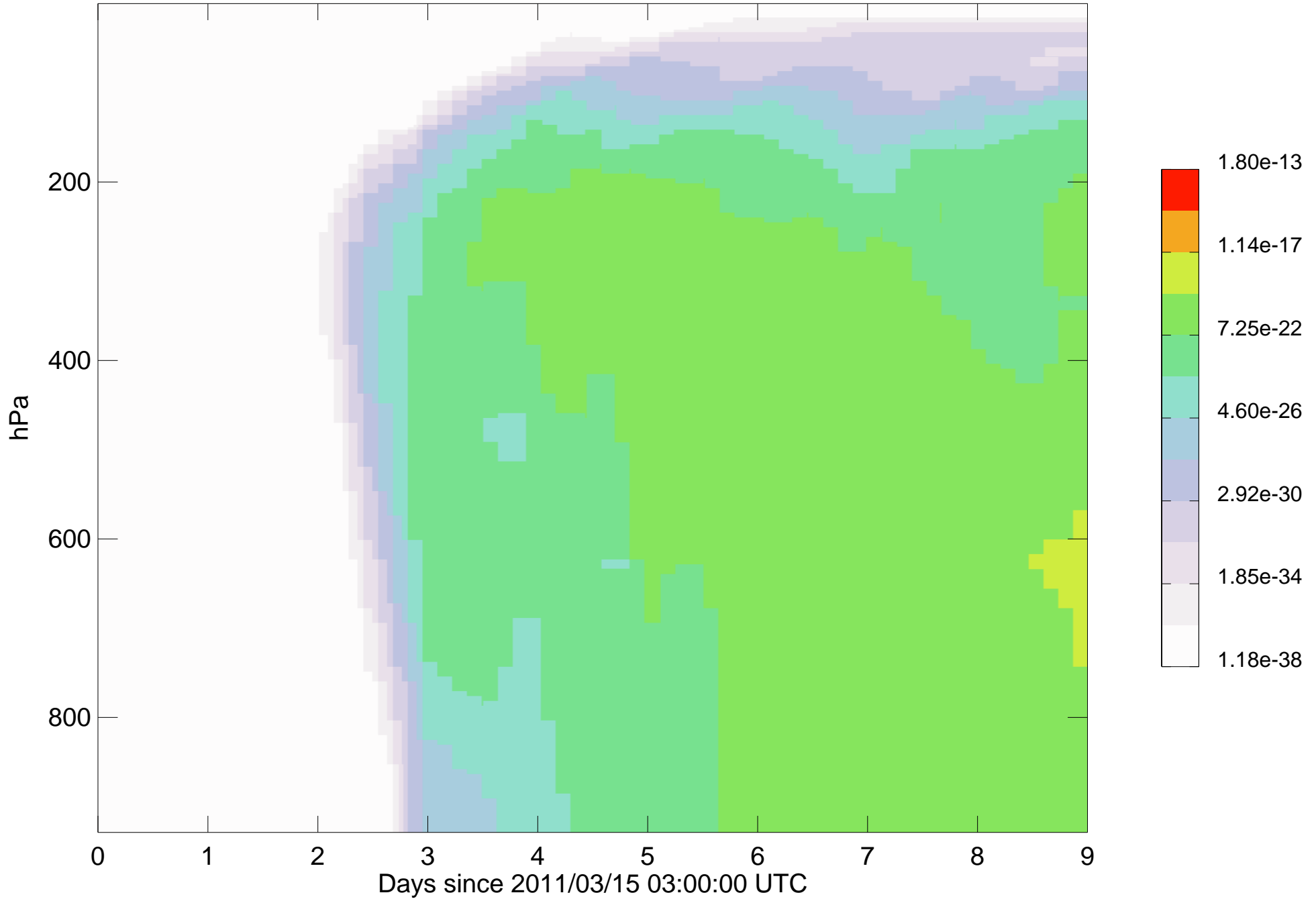
POWER PLANT (N37.42, E141.00)



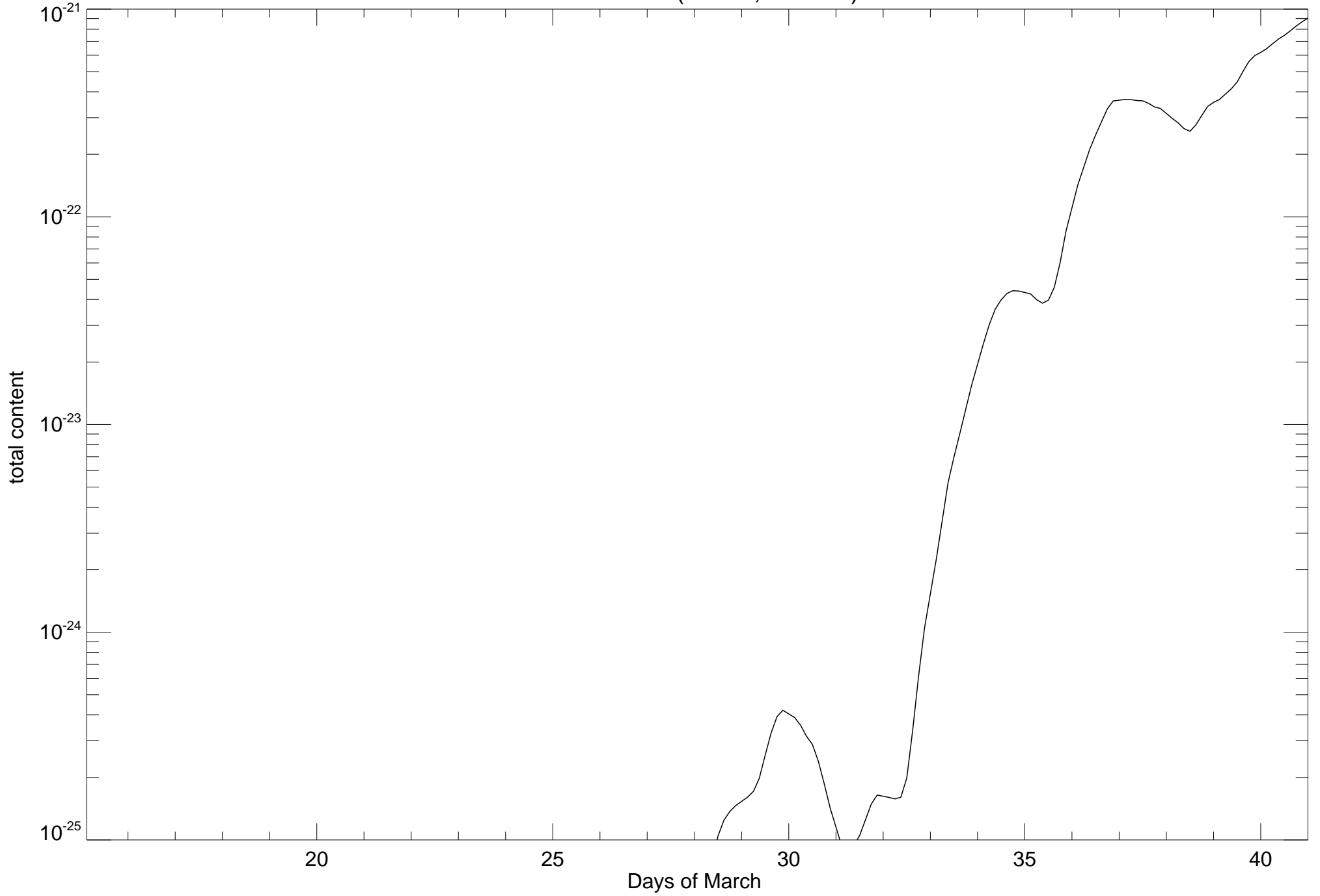
SENDAI (N38.25, E141.00)



Los Angeles (N34.05, W118.24)

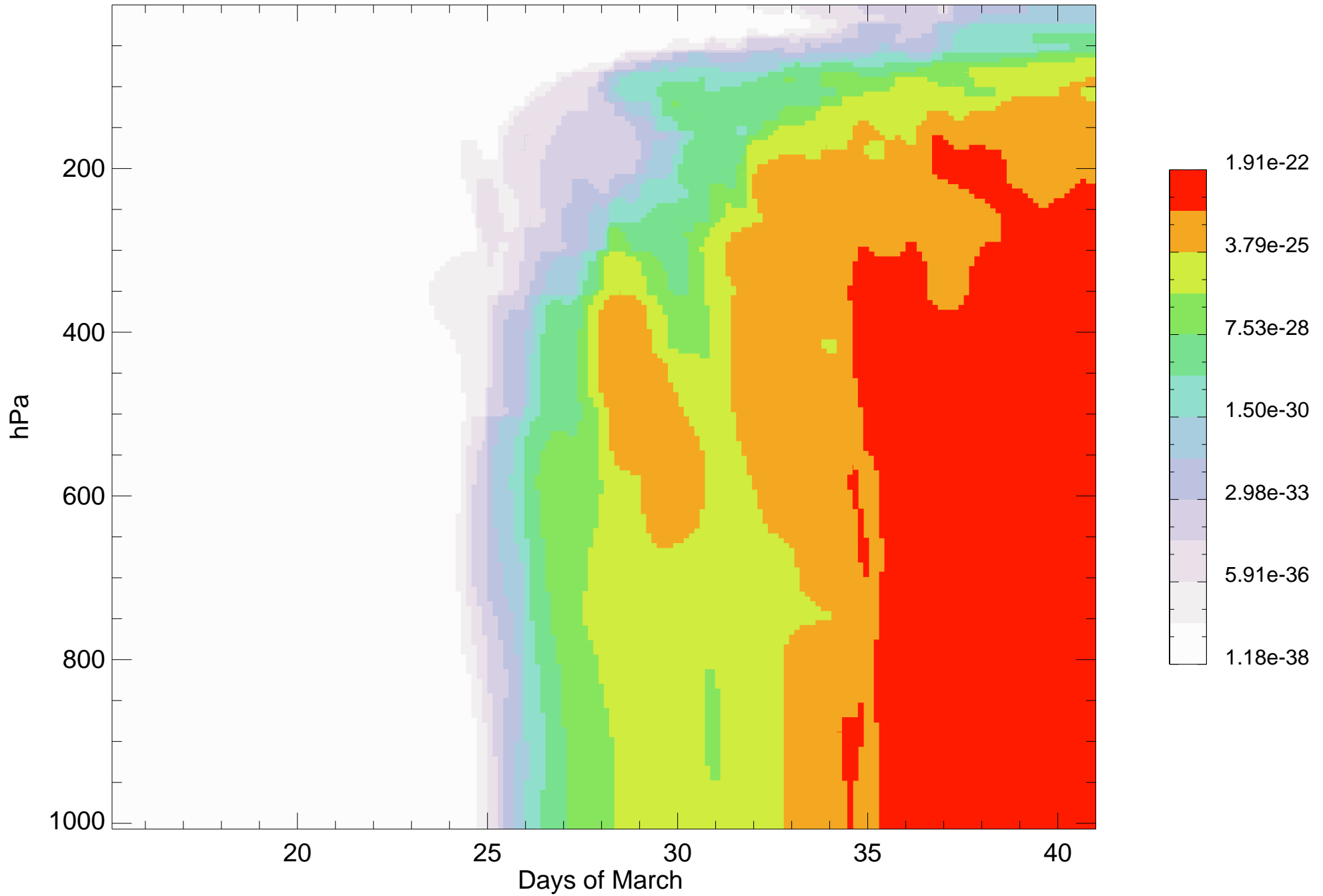


Nederlands (N5.13, E52.08)





Nederlands (N5.13, E52.08)



## GRÍMSVÖTN (May 2011)

### source

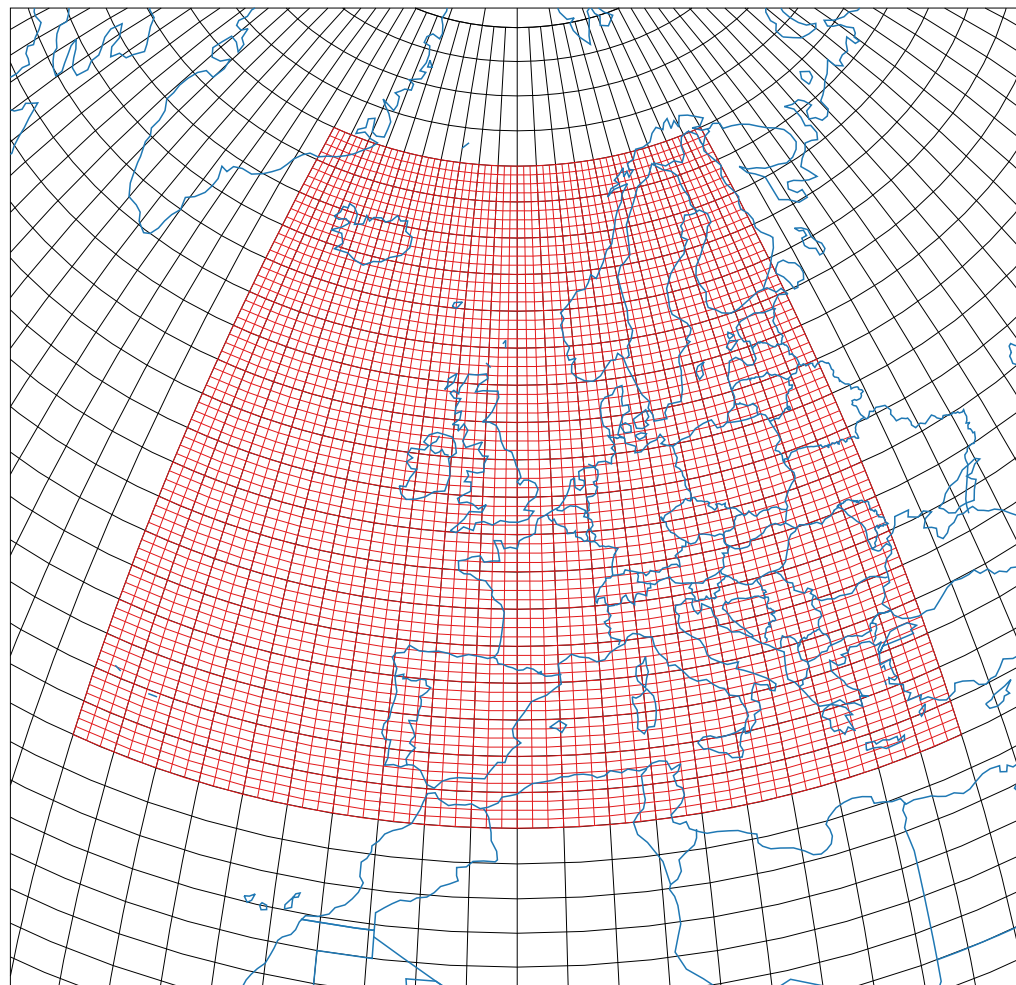
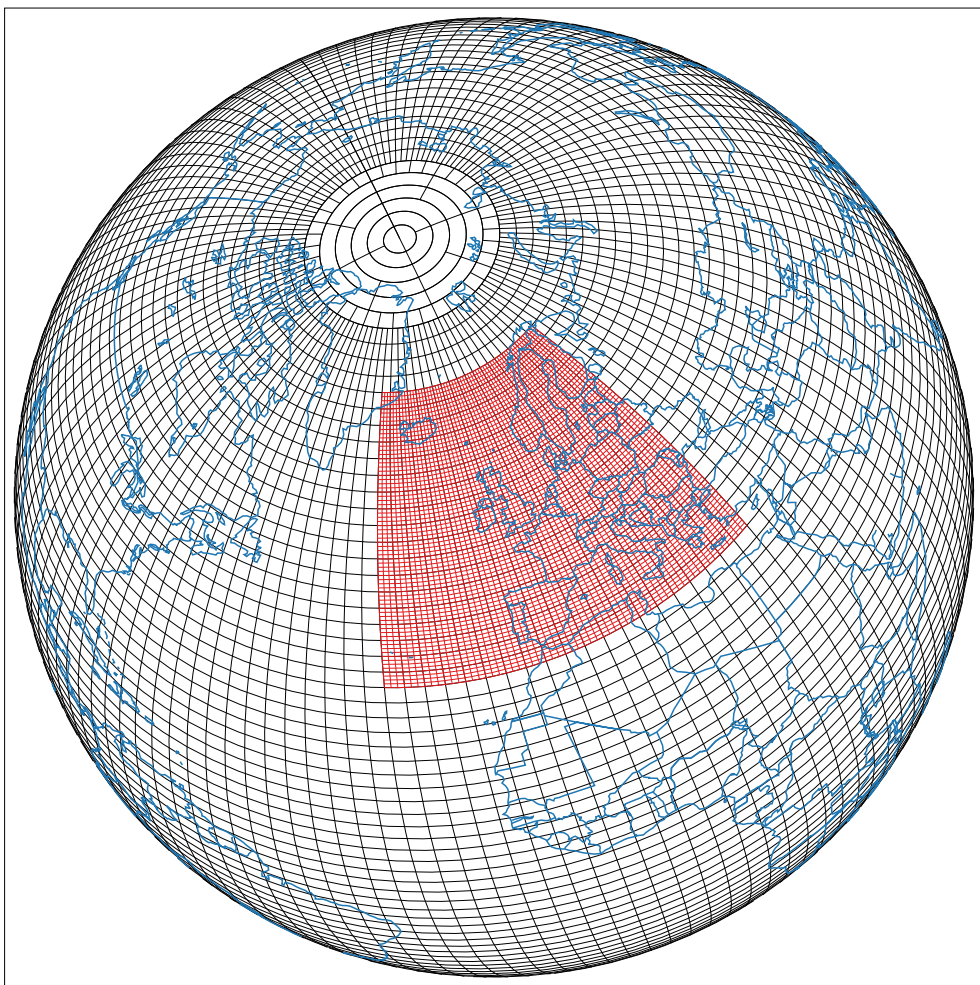
- volcano, continuous for 6 tracers
- three (3) max injection heights:
  - 20 km for May, 21st
  - 13.5 km for May, 22-23
  - 9 km from May 24
- vertical distribution b/w volcano top and max injec. (linear w/r/t height)

# GRÍMSVÖTN (May 2011)

## Settings

- 6 tracers
- 2 regions
  - global 3x2
  - europe 1x0.5
- wet deposition & ~~sedimentation~~
- operational : ~~ongoing~~ stopped

Bin size limits	0	5.	11.	17.	23.	29.	40.
Average diameters	4.	8.	14.	20.	26.	32.	
Fall velocity (km/day)	0.	0.4	1.25	2.5	4.3	6.5	



## NEXT

### Settings

- better modelisation of the source
- hindcast studies for evaluation