

## Aim:

Increase accuracy in the CTBTO's localization process through even higher spatial resolution than currently used in operation (0.5 deg)

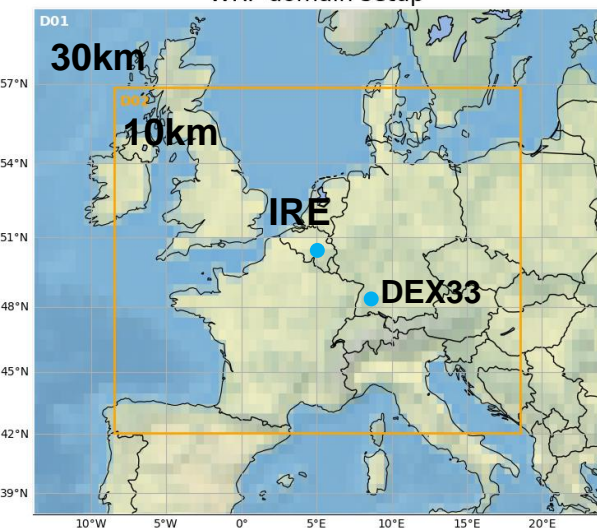
## Models:

- Flexpart-CTBTO with 0.5° & 0.1° input data from ECMWF
- Flexpart-WRF with ~0.1° input data from WRF
  - WRF is driven by ECMWF 0.5° input data

## Methodology:

- Run models backwards for each sample from DEX33
- Compare model results
- Verify concentrations against IRE stack emission data

WRF domain setup



## Observation periods of elevated Xe-133 concentrations at IMS station DEX33

#	Period start date	length	Highest concentration
1	2013 11 27	7 d	26.8 mBq/m <sup>3</sup>
2	2014 01 19	11 d	7.6 mBq/m <sup>3</sup>
3	2014 03 13	7 d	16.1 mBq/m <sup>3</sup>
4	2014 04 04	6 d	16.0 mBq/m <sup>3</sup>
5	2014 07 07	10 d	6.1 mBq/m <sup>3</sup>
6	2014 07 26	7 d	6.3 mBq/m <sup>3</sup>
7	2014 08 28	8 d	7.3 mBq/m <sup>3</sup>

## First peek into results from period #1 (not validated yet):

mBq/m <sup>3</sup>	S1	S2	S3	S4	S5	S6	S7
OBS	0.16	0.09	26.8	5.28	4.18	1.11	0.19
FP-CTBTO 0.1 ECMWF	0.16	0.07	0.03	11.69	0.95	0.04	0.05
FP-CTBTO 0.5 NCEP	0.74	1.72	53.69	19.17	5.17	2.02	0.25

## Work in progress - Outlook

- Some Flexpart-WRF simulations for current setup are still in the pipeline
- **Near future results will be updated in the display material**
- Further optimization needed.