

Co-operative programme for monitoring and evaluation of the long-range transmissions of air pollutants in Europe



Norwegian Meteorological Institute

### **CAMS urban increment**

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#### What is CAMS? (Copernicus Atmosphere Monitoring Service)

Air Quality & Atmospheric Composition

Climate Forcing

Ozone Layer & UV

Solar Radiation

Building blocks of CAMS

**Emissions And Surface Fluxes** 

## CAMS 50 'Regional production' (Oct 2015->)

- The 'flagship' of CAMS chemical weather forecast
- EMEP is 1 out of 7(10) models
- Daily forecasts and analyses (data assimilation), evaluation, annual reanalyses, model development

Monday 16 January 2017 00UTC CAMS FORECAST D+0 Surface PM10 Aerosol Daily Maximum [µg/m3]





# CAMS71 – Policy products and 'the city-SR Service'

- •Estimate how much of the pollution origins inside the city/outside the city
- •Available for PM10 (PM2.5) and O3 (from EMEP model)
- •Forecast every day for 4 days (0.25x0.125 degree)
- •All EU capitals + selected cities
- •Area for a city: Administrative area for a city from gadm.org
- •Webpage: http://policy.atmosphere.copernicus.eu/CitySourceAllocation.html
- •For selected episodes (activated by ECMWF): SR runs for countries for contribution of emissions in countries to pollution in a city (for EMEP model and LOTUS EUROS). Activated 3 times since August 2016

## Map of areas used



# Example – Barcelona

City-Barcelona = Reykjavik **PM10** Pollutant-Tallinn Oslo Riga Vilnius Copenhagen Dublin Amsterdam Berlin Warsaw Brussels Prague Paris Vienna Attribution to External/Local PM10 sources Zagreb Bucharest Sofia Local External • Madrid Barcelona Rome Lisbon Athens Nicosia Valletta Highcharts.com © Natural Earth 2017/04/26 Barcelona - EMEP 30 ≡ PM10 ug/m3 20 10 0 Wed Apr 26 Thu Apr 27 Fri Apr 28 Sat Apr 29 ≡  $\equiv$  $\equiv$  $\equiv$ Wed Apr 26 Thu Apr 27 Fri Apr 28 Sat Apr 29

Receptor region here is the adm. area, but could be a site

6

## The Dec-16 episode in Paris

#### EMEP, adm area of city



#### EMEP, 1 grid



#### Choice of 'city area' matters

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# What can be done for the 'Twin site exercise'?

- Operational since summer 2016, results stored
- Re-run for selected periods of time: Can look at monthly (*seasonal* ) or even finer time resolution
- Agree on how to define the city area
- Can look at *contributions from different sectors*
- Can look at contribution from *city and outside city*, but could also add regional contribution
- Can look at contributions of *different chemical components* (e.g. EC/OC, different SIA's etc)

## **The End**



## **CAMS71 'Policy Products'**



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Sat Jan 28

Paris

**PM10** 

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# Example – Prague

