SAG APPs

GAW Scientific Advisory Group (SAG) on Modelling Applications (SAG-APPs)

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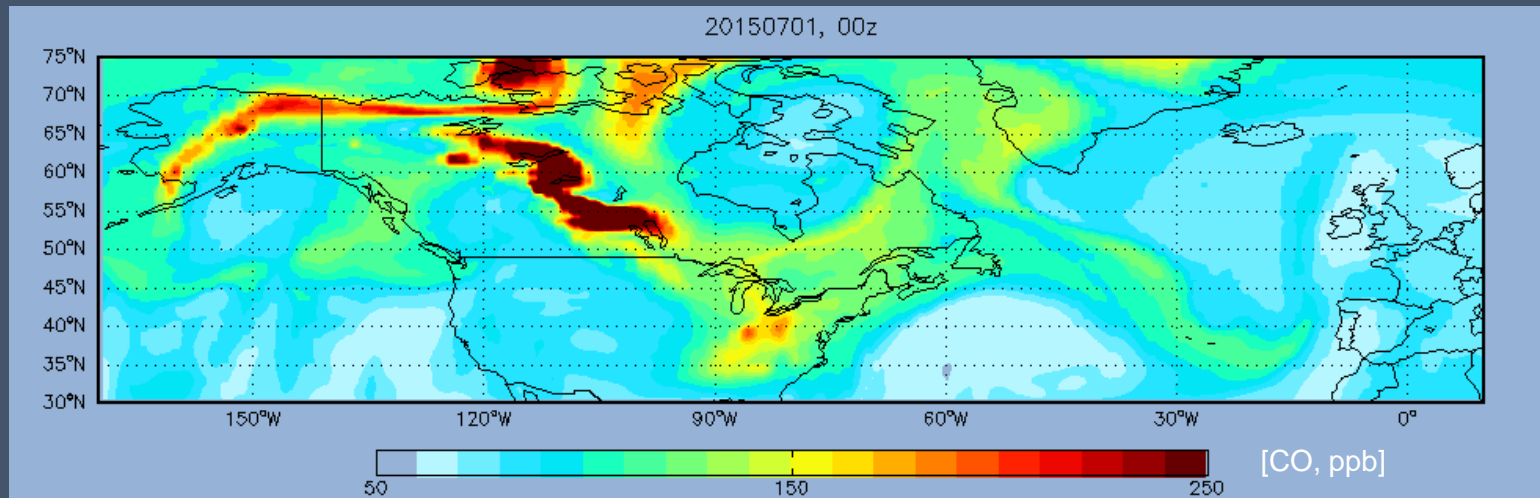
Objectives

Established in 2016 by WMO Congress to enhance the exchange between the GAW observational community, the modelling communities and other-end users of atmospheric composition data.

- SAG-Apps is to develop a portfolio of the modelling products and services related to atmospheric composition.

- SAG-Apps is to demonstrate the usefulness of exchanging chemical observational data in Near-Real-Time in support of monitoring and forecasting applications.

Membership

Joint Chairs:

- Dentener, Frank (JRC); Peuch, Vincent-Henri (ECMWF)

Members:

- Maker, Paul (ECCC); Zhou, Chunhong (CAMS); Sofiev, Michail (FMI); TANAKA, Taichu (JMA); Hegglin, Michaela (Uni Reading); Hort, Matthew (Met Office); Da Silva, Arlindo (NASA); Grell, Georg (NOAA)

Ex-officio members:

- Bouchet, Véronique; Thouret, Valérie; Pappalardo, Gelsomina; Vermeulen, Alex; Benedetti, Angela; Carmichael, Greg

WMO Secretariat

- Baklanov, Alexander

Specific Activities

Apps-1. Implement the SAG-Apps and develop its activities plan with special attention to close interaction with the other SAGs.

Apps-2. Address applications that **use NRT data** delivery on scales larger than urban, including the development of **boundary conditions for local modelling**; and improvement of models and development of services related to dust, volcanic ash and biomass burning plums and health applications.

Apps-3. Work in close collaboration with WIS/WIGOS to review **data systems** to ensure possibility of service delivery.

Apps-4. Improve NWP through better representation of atmospheric composition. This will require liaising with WGNE.

Specific Activities

Apps-5. Based on data assimilation, facilitate global **uptake of "realistic" boundary conditions for regional to local air quality applications** worldwide in order to demonstrate that such boundary conditions make a **quantitative difference** when implementing local air quality forecasting applications. This will require liaising with SAG GURME.

Apps-6. Advise respective communities on the **techniques to assimilate atmospheric composition observations** to better monitor and predict large-scale transport of dust, fire and volcanic emissions and their impacts. This will require liaising with groups like SDS-WAS, IGAC&GEIA, VAACs.

Apps-7. Further **develop and support health and other air quality impacts** related services at large scales such as platforms focused on the global burden of disease and air quality impacts on agriculture, through collaborations with WHO, UNEP and other organizations.
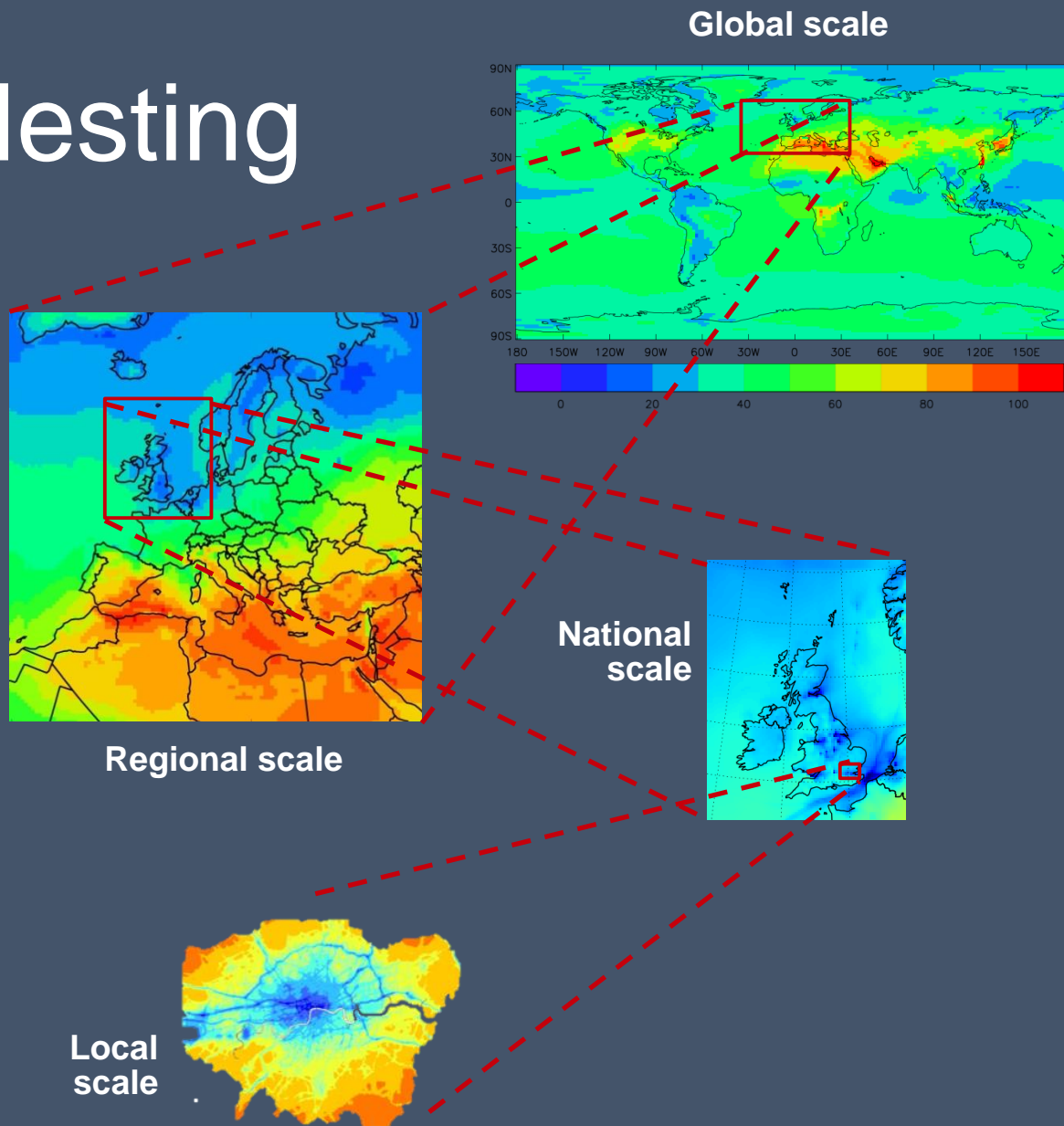
Task Groups

- **Assessment activities**
(lead Michaela + Frank)

- **Improving emissions**
(lead Mikhail + Chunhong)

- **Further development of NRT systems**
(lead Mathew + Vincent-Henri)

- **Data aspects**
(lead Arlindo + Taichu)

- **Developing scientific activities**
(lead Paul + Georg)

Ideas

- Assessment activities
  - Keep track of (and promote use of data in) assessment activities in the chemistry + air pollution-climate research area, and to help the SAG identify research needs, synergies and opportunities

- Improving emissions
  - Natural emissions; NRT data to improve emissions; unified emission from different sources and sectors; emission evaluations; exchange regional experiences to build better practice

- Further development of NRT systems
  - NRT verification and validation; Attribution; Nesting facility/guidance/process; links with other services e.g. voclanic ash, uv, etc

- Data aspects
  - Maintain live document on in-situ and satellite data being used in NRT for assimilation and verification.

- Developing scientific activities
  - Composition benefit for NWP without the cost e.g. climatologies, time lagged forecast data

Nesting

Global scale

Regional scale

National scale

Local scale

Transport

Emissions, Observations

Users

SAG APPs