



GLOBEEMISSION

GlobEmission (ESA DUE program)

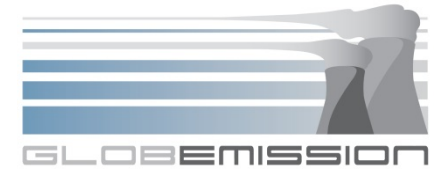
Project by KNMI, BIRA-IASB, FMI, TNO, VITO



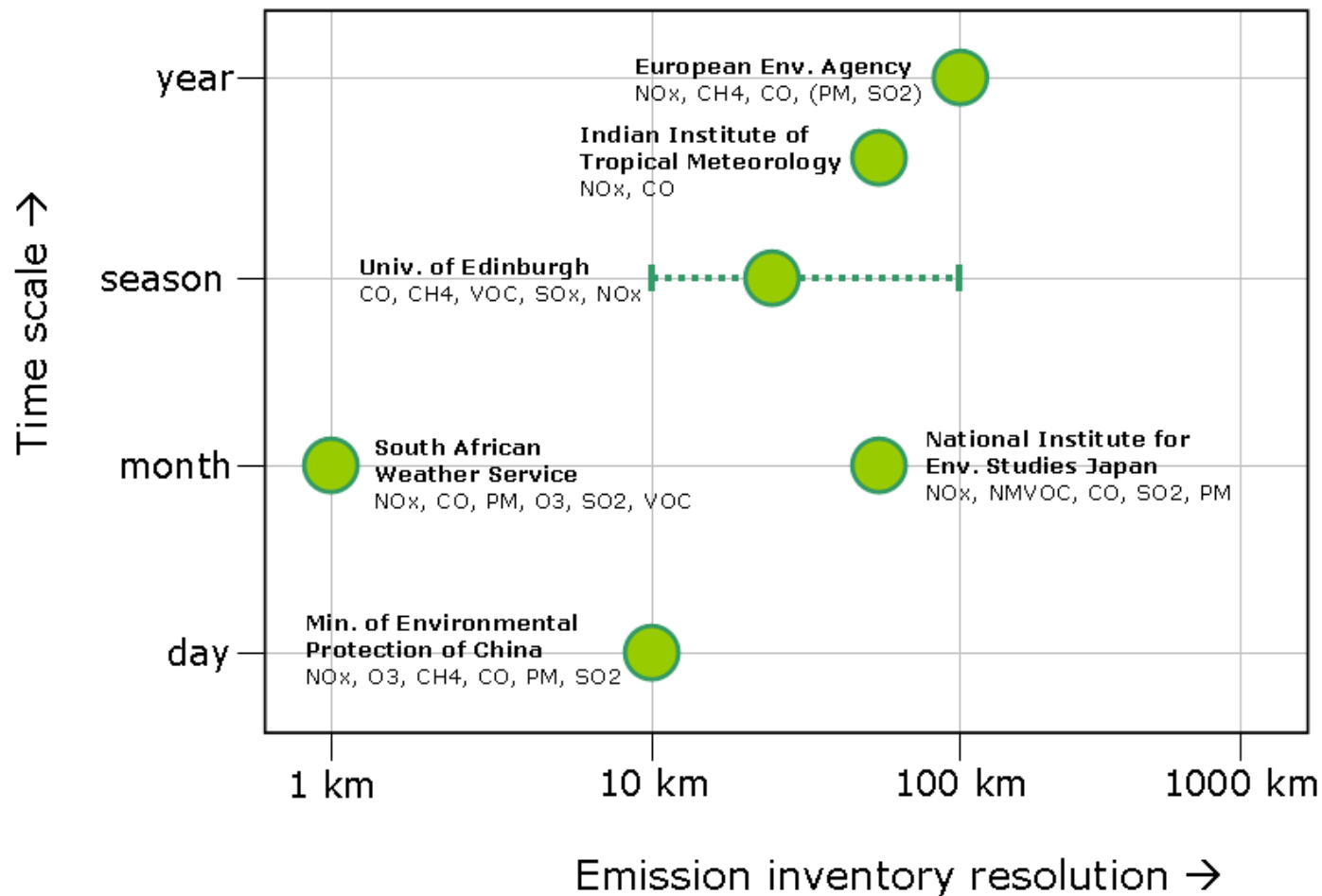
Royal Netherlands
Meteorological Institute



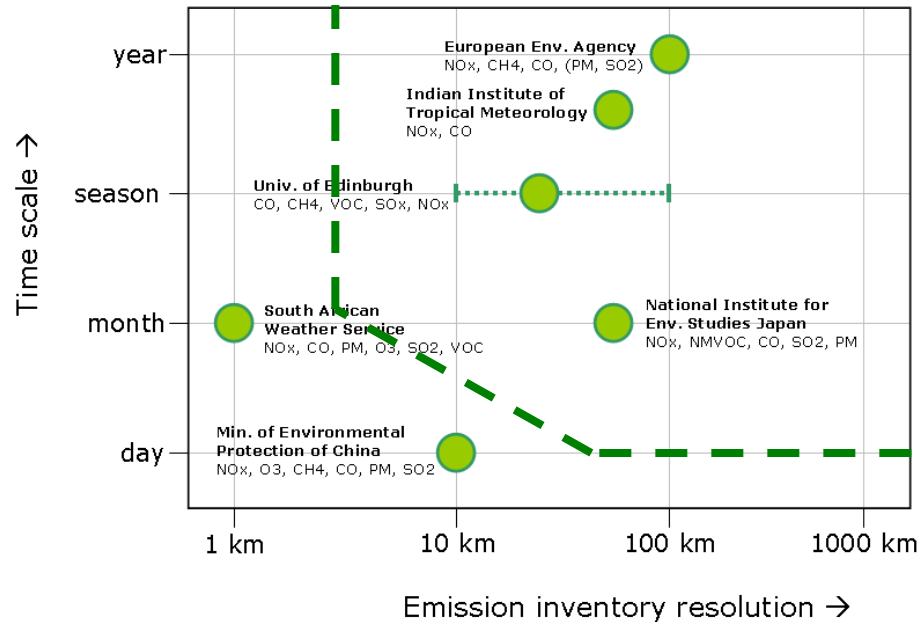
User Requirements: Temporal/Spatial



- Species: NO_x, CH₄, CO, NMVOC, SO₂, PM, O₃
- Accuracy: better than 30% - 80 %



Are the user requirements met ?



Specific user requirements:

- Species: NO_x, CH₄, CO, NMVOC, SO₂, PM
- Accuracy: better than 30% - 80 %
- Spatial resolution: 1 km - 50 km
- Time resolution: daily – annual
- Regional and Global

GlobEmission:

NO_x, CO, NMVOC , SO₂, PM
ok, but more validation needed

GlobEmission: 5 km – 50 km

GlobEmission: daily - monthly

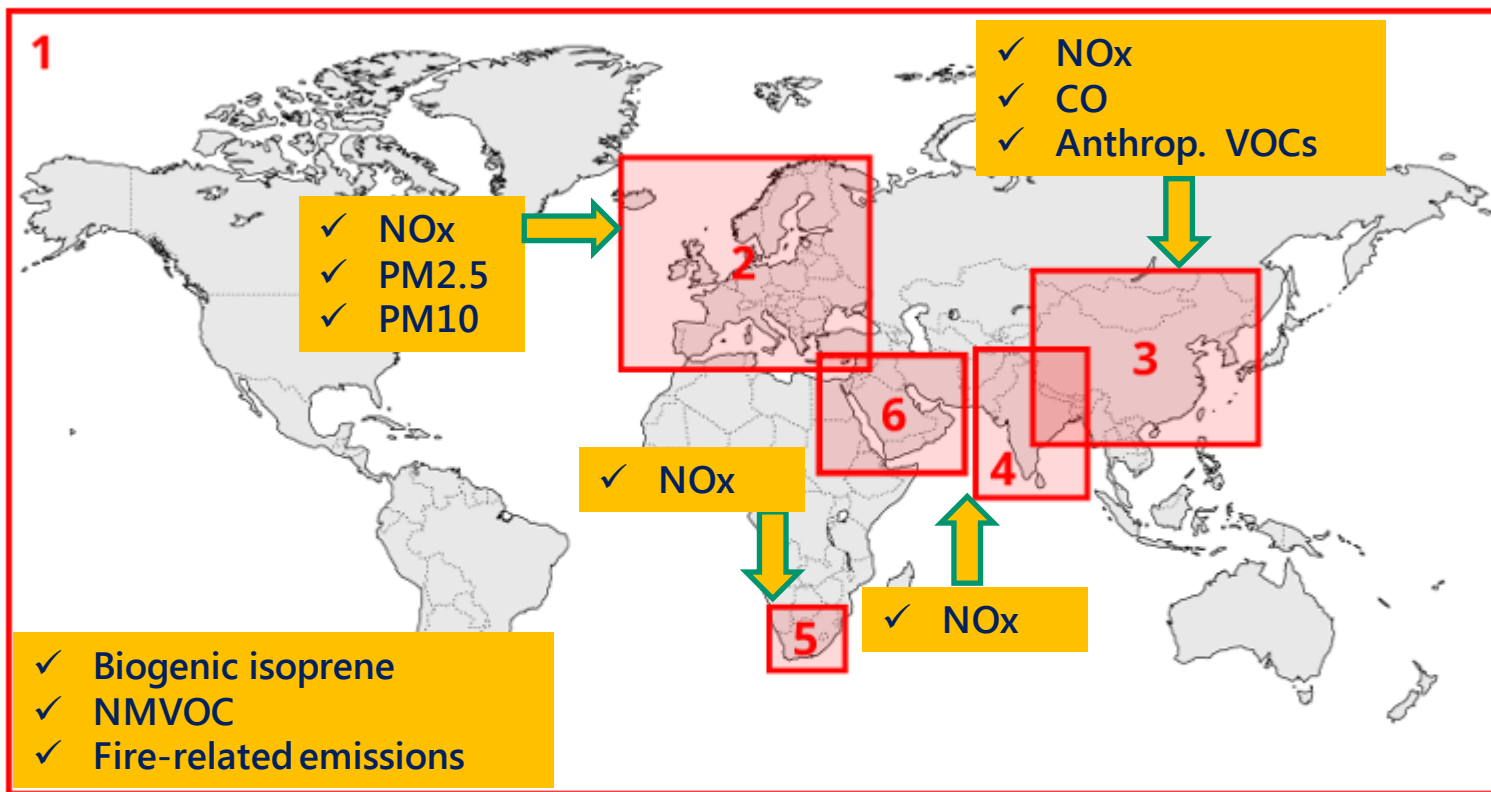
ok

Data portal: www.globemission.eu



Select emission data area:

[View all datasets](#)



World
[fire-related emissions](#),
[NMVOC](#), [biogenic isoprene](#)



Europe
[NO_x](#), [PM_{2.5}](#), [PM₁₀](#)



East Asia
[NO_x](#), [VOC](#), [agricultural CO](#)



India
[NO_x](#)



South Africa
[NO_x \(hires\)](#)



Middle East
[NO_x](#)

User documentation



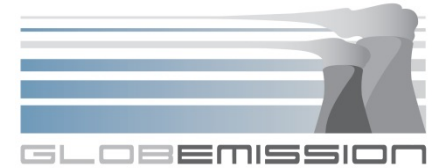
- User Requirement Document (2014)
- Product Specification Document (2014)
- Algorithm Descriptions (2015)
- Product Validation Report (2013, new version in Dec. 2015)
- Information per product page

Services



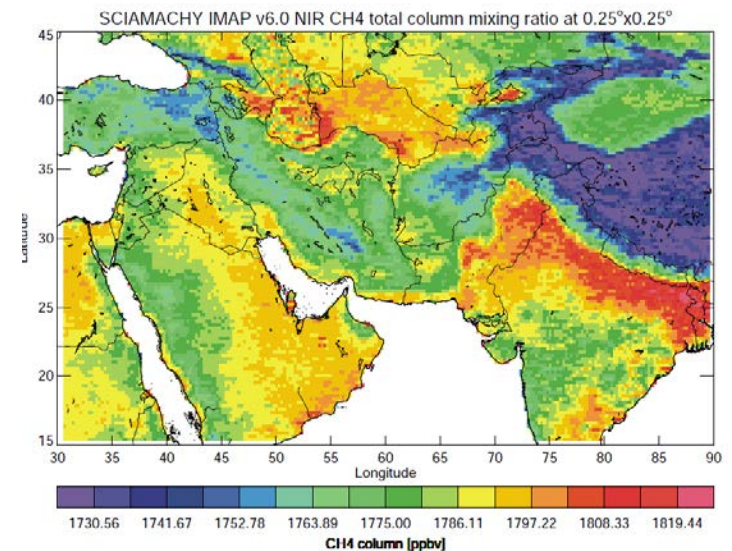
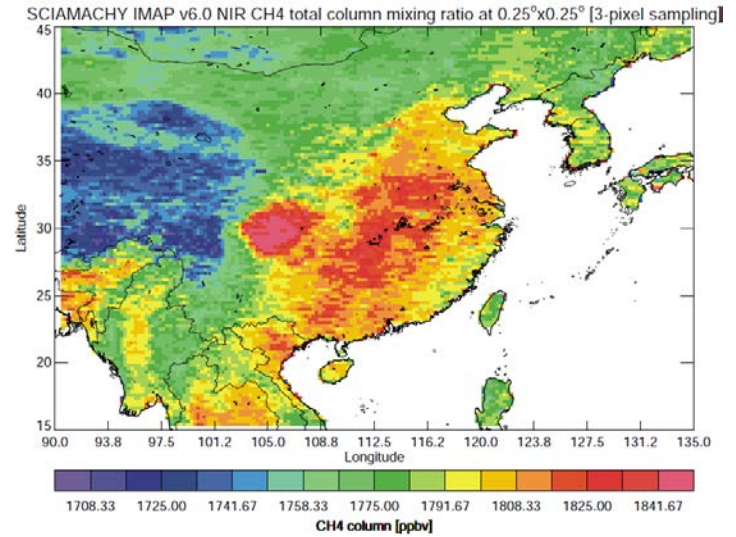
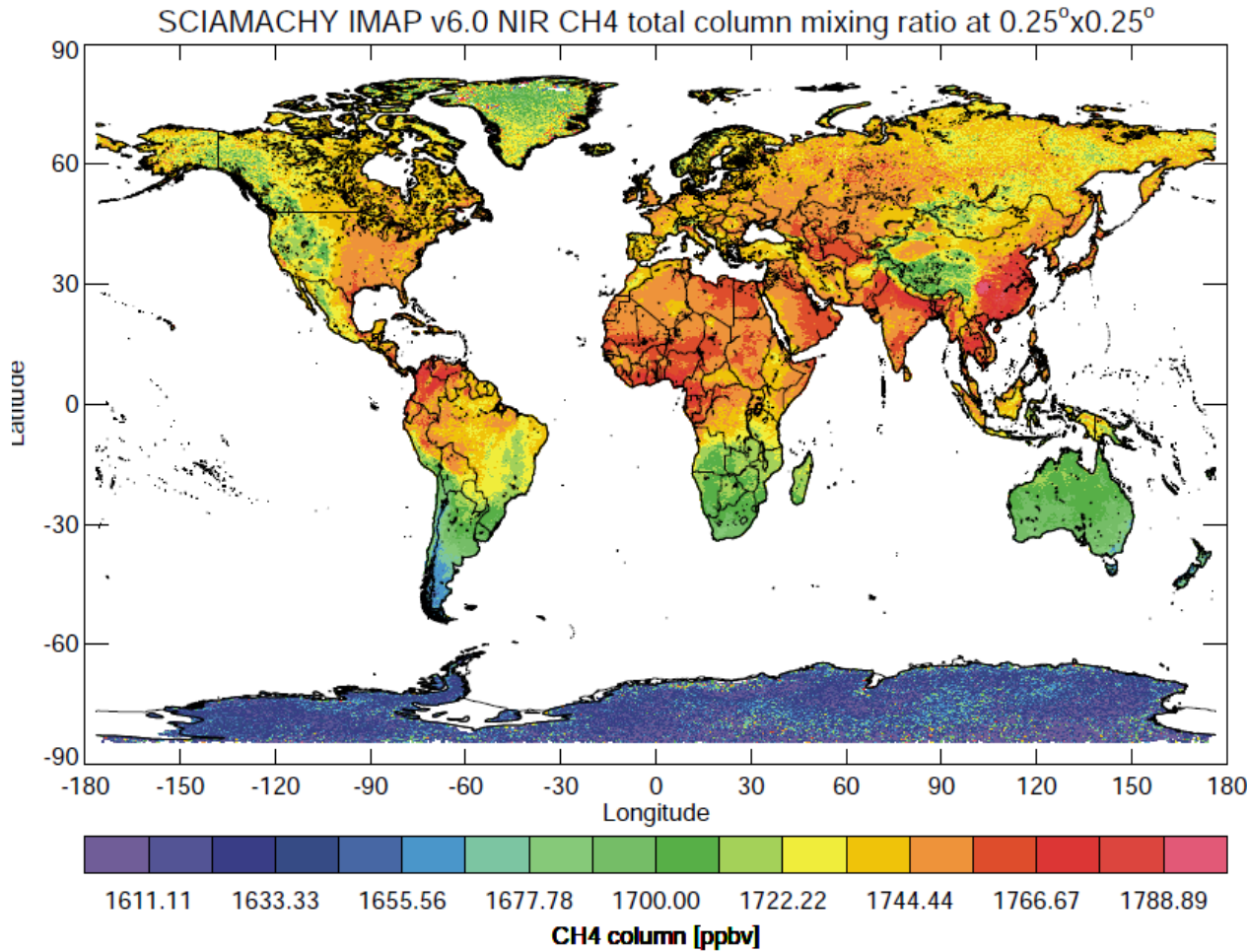
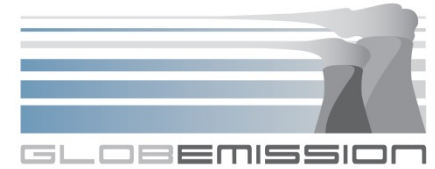
- Improved and updated services of the first phase of GlobEmission.
- Global inventory for isoprene and anthropogenic VOCs using OMI HCHO columns. Anthropogenic VOC emissions in the Middle East, China and South Asian countries.
- Extension of the current NO_x emission trend service in Europe to later years. First NO_x emissions using DECSO for Europe.
- Emissions (including downscaling) for the Middle East.
- Continuation of the NO_x services for China, South Africa and India by using observations of OMI, GOME2-A, GOME2-B and create a time series of 2007-2014.
- Improvement of the PM inversion by inclusion of missing (secondary formation of organic matter) or under-represented (e.g. Dust in Asia) components.
- SO₂ emission estimates for point sources.

Future possibilities



- Improved quality
- Other possible products: methane, ammonia, ship emissions
- Operational services (annual or monthly update)
- More embedding in GEIA community
- Study climate related emissions
- New satellites (sentinels)

Methane concentrations SCIAMACHY 2003-2012



Requirements GlobEmission 3



- New data products, new species ?
- New domains ?
- Other resolution, time range, accuracy ?
- Improvements user interface, documentation ?
- Special user-dedicated products ?

=> discussion groups