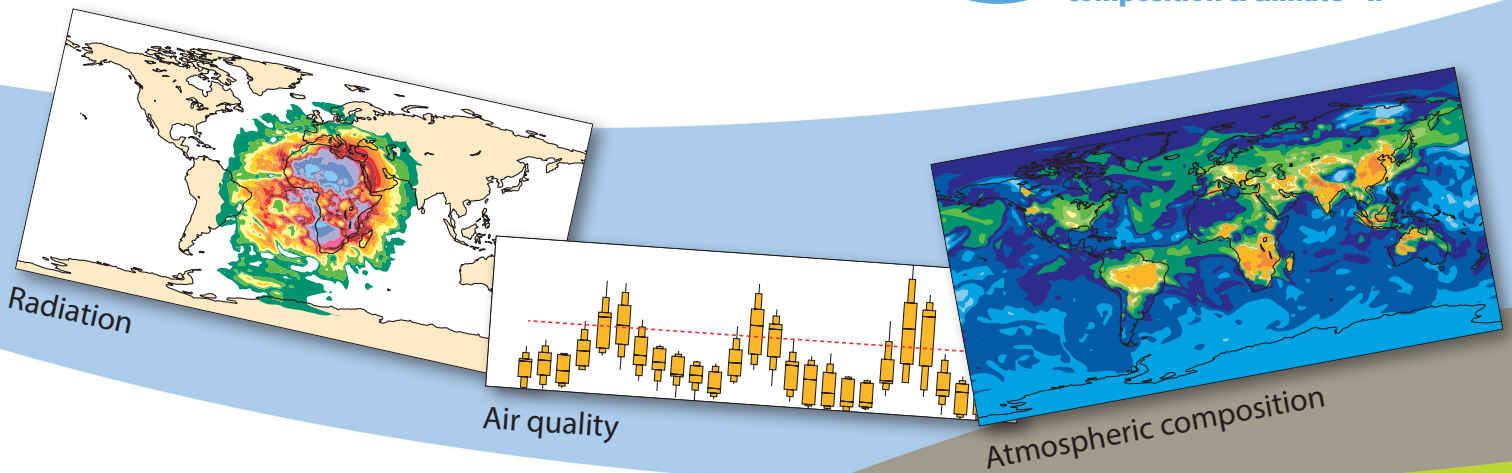
Monitoring Atmospheric Composition & Climate

Helping Europe respond to climate change and poor air quality

macc
Monitoring atmospheric composition & climate – II



SEVENTH FRAMEWORK PROGRAMME

opernicus

http://www.copernicus-atmosphere.eu

ECMWF	European Centre for Medium-Range Weather Forecasts
EC-DG-JRC	European Commission - Joint Research Centre
EAA	Umweltbundesamt GMBH
BIRA-IASB	Institut d'Aéronomie Spatiale de Belgique
FMI	Ilmatieteen Laitos
ARMINES	Association pour la Recherche et le Développement des Méthodes et Processus Industriels
CEA	Commissariat à l'Energie Atomique et aux Energies Alternatives
CERFACS	Centre Européen de Recherche et Formation Avancée en Calcul Scientifique
CNRS	Centre National de la Recherche Scientifique
INERIS	Institut National de l'Environnement Industriel et des Risques
MF-CNRM	Météo-France
UPMC	Université Pierre et Marie Curie - Paris 6
DLR	Deutsches Zentrum für Luft - und Raumfahrt e.V.
DWD	Deutscher Wetterdienst
IUP-UB	Universität Bremen
JÜLICH	Forschungszentrum Jülich GMBH
MPG	Max Planck Gesellschaft zur Förderung der Wissenschaften e.V
RIUUK	Rheinisches Institut für Umweltforschung an der Universität zu Köln e.V
ULEI	Universität Leipzig
AA	Academy of Athens
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NUIG	National University of Ireland, Galway
KNMI	Koninklijk Nederlands Meteorologisch Instituut
SRON	Netherlands Institute for Space Research
TNO	Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek
VUA	Vrije Universiteit Amsterdam
MET.NO	Meteorologisk Institutt
NILU	Norsk Institutt for Luftforskning
IM	Instituto de Meteorologia
AEMET	Agencia Estatal de Meteorologia
SMHI	Sveriges Meteorologiska och Hydrologiska Institut
CERC	Cambridge Environmental Research Consultants Ltd
KCL	King's College London
UKMET	Met Office
ULEIC	University of Leicester
UNIVLEEDS	University of Leeds

Objectives

MACC-II - Monitoring Atmospheric Composition and Climate - is the current pre-operational atmospheric service of the European Copernicus programme. MACC-II combines state-of-the-art atmospheric modelling on global and European scale with Earth observation data to provide information services covering European air quality, global atmospheric composition, climate forcing, the ozone layer and UV radiation, and solar energy. MACC-II is expected to enter its fully operational phase in 2014.

Products range from 5-day forecasts of global atmospheric composition and 4-day forecasts of European air quality to re-analyses for past periods of species important for air quality and climate forcing. Validation of the quality of the products forms an integrated part of the project.

Image *Wild fire smoke plumes as seen by MODIS LANCE/EOSDIS MODIS Rapid Response Team, GSFC*

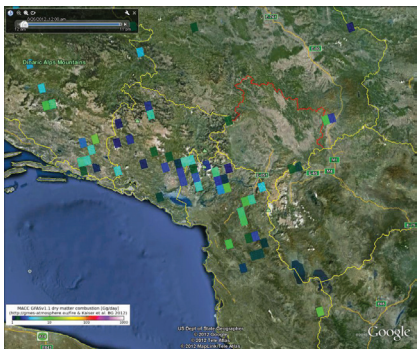

Image *MACC-II fire detection map*
© Google 2010, US Dept. of State Geographer, © 2012 Google, © 2012 Tele Atlas, © 2012 MapLink / Tele Atlas

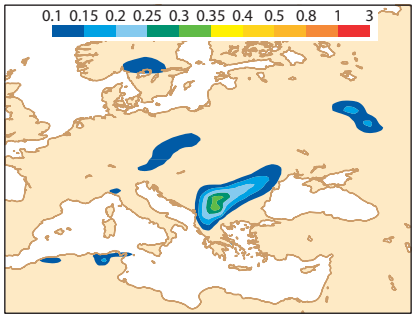

Image *Organic matter aerosol optical depth at 550 nm*

Example *MACC-II uses a real-time wildfire detection system based on satellite observations to estimate the amount of smoke particles released into the atmosphere. This information is then used in MACC's forecasting model to predict the extent of the smoke plume for the next few days, as is shown here for wildfires in south-east Europe on 26 August 2012.*

Users

MACC-II users come from a wide range of application areas. Copernicus Downstream Services, the European Environmental Agency, national environmental agencies, the European Commission, Space Agencies, commercial users dealing with for instance solar energy, the scientific community, and the general public are among an increasing user base of MACC-II products.

For more information

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It is coordinated by the European Centre for Medium-Range Weather Forecasts (http://www.ecmwf.int) and operated by a 36-member consortium.