

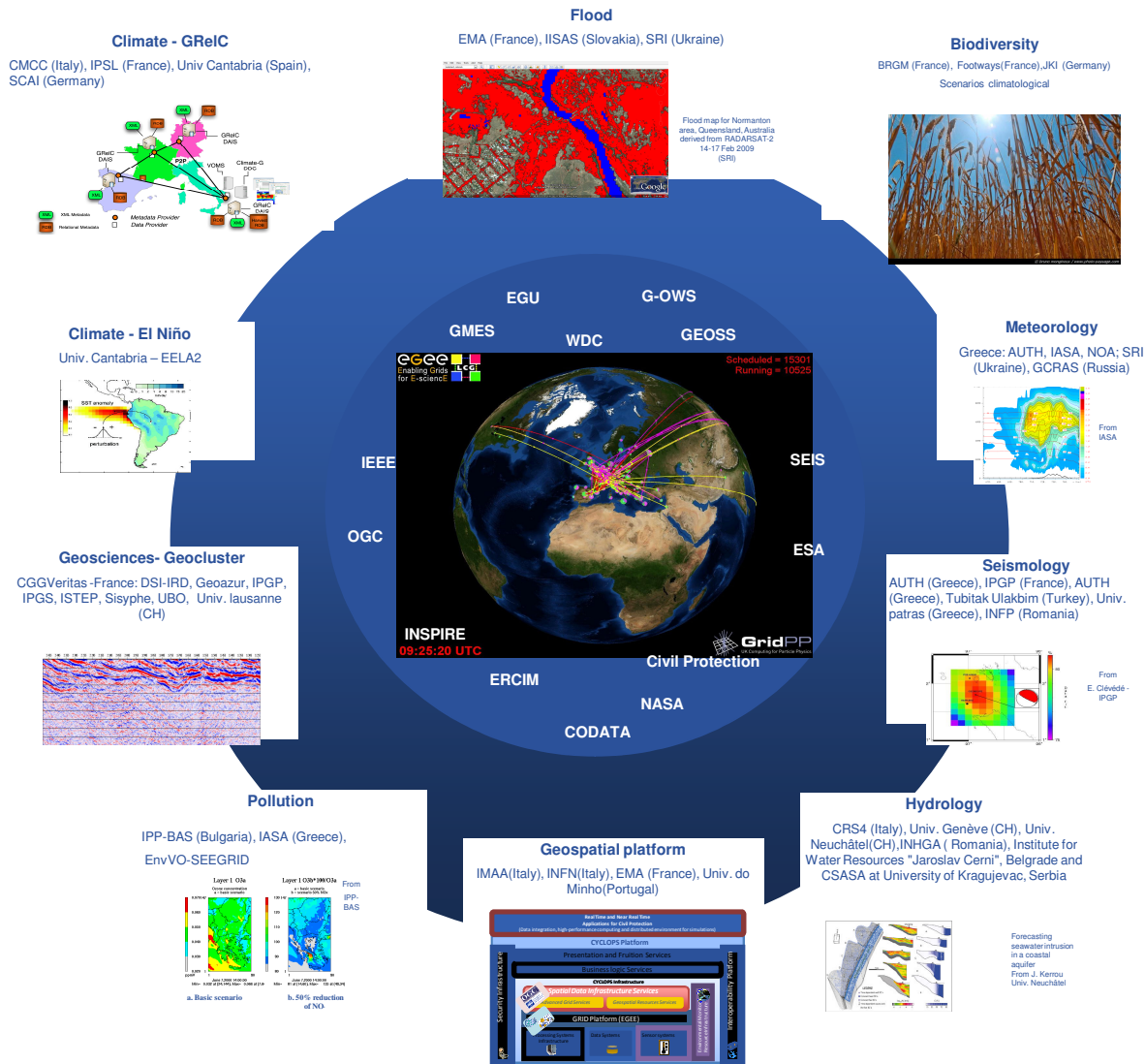
ES Activity on Grid and its future

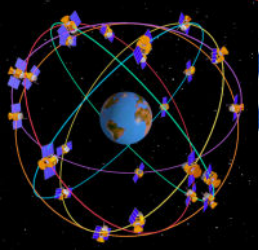
Monique Petitdidier & Horst Schwichtenberg

CNRS- IPSL/Latmos, France

SCAI/Fraunhofer, Germany

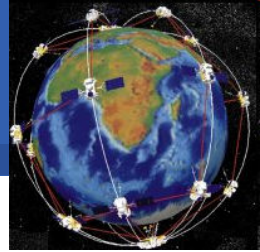
- **Earth Science Cluster**
 - ESR
 - EGEEODE – Expanding Geosciences On Demand
 - eEarth: Russian
 - EU-Asia Grid
- **SEEGRID**
 - Seismology
 - Environmental
 - Meteorological
- **CYCLOPS**
- **CEOSGrid**
- **ES applications in regional Grid**





Enabling Grids for E-science

Grid

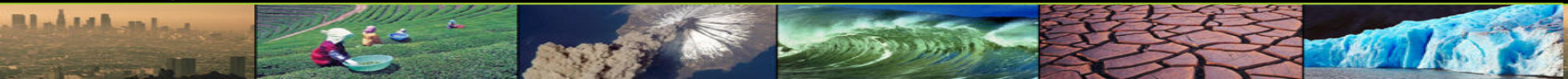


N. Kussul – SRI- NASU-NAUSU, Ukraine

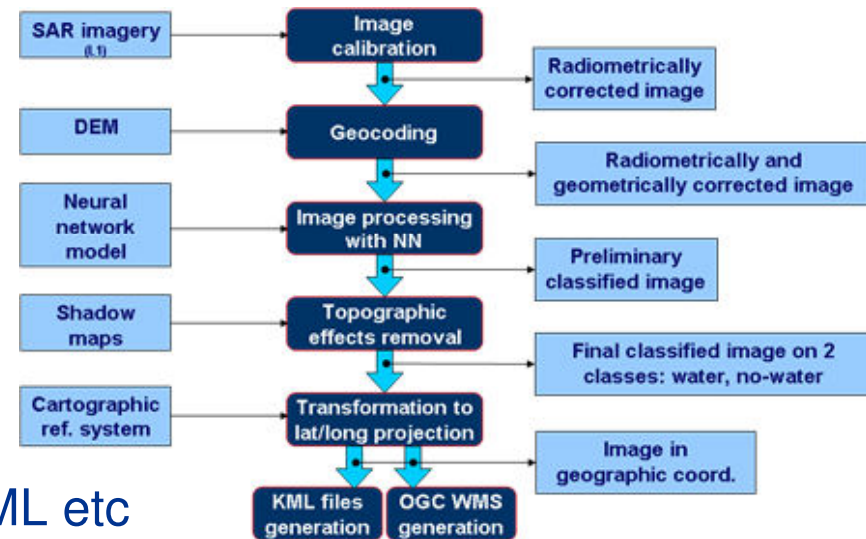
WGISS – CEOS Working Group on Information Systems and Services

Wide Area Grid

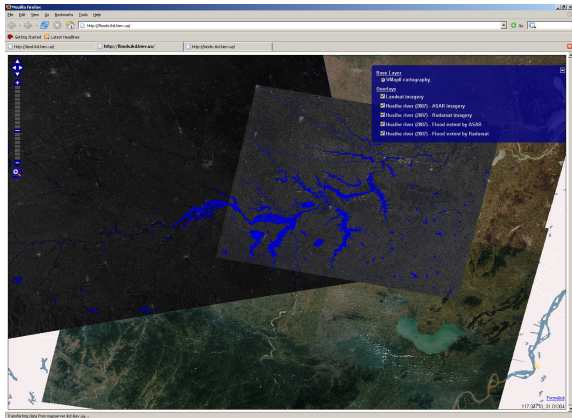
- collaborative effort of space agencies to share data-processing resources
- **Testbed**
 - disaster-related applications, particularly **floods**
 - GEO 2009-2011 Task # (DI-06-09):
Use of Satellites for Risk Management
 - End-users
 - **UN-SPIDER** - United Nations Platform for Space-based Information for Disaster Management and Emergency Response



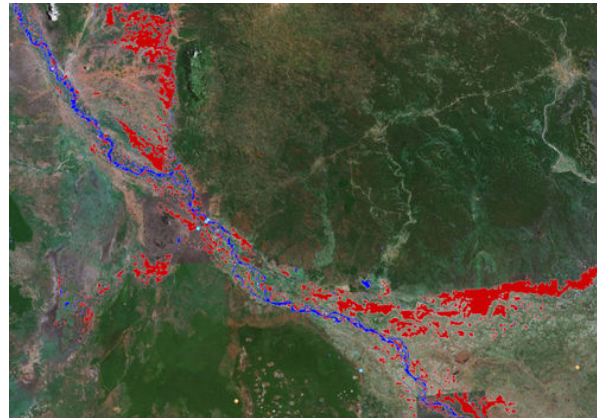
- **Delivered within 24 h after data acquisition**
- **Satellite synthetic-aperture radar (SAR) instruments**
 - ERS-2/SAR
 - ENVISAT/ASAR
 - RADARSAT-1/2
- **Ground validation**
 - Chinese territory on river Huaihe 2008 => 95% match of satellite observations against field measurements
- **Output format**
 - OGC-compatible: WMS, WCS, KML etc



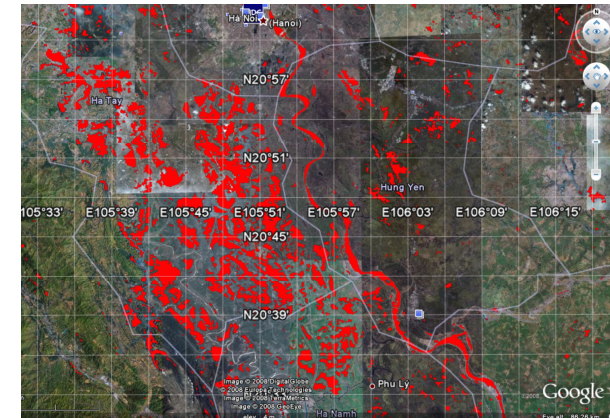
Processing workflow



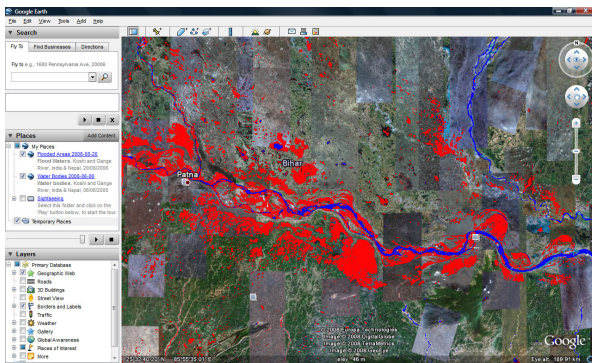
China, river Huaihe, 2007



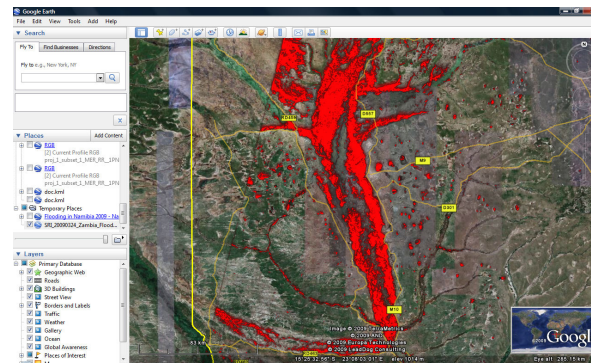
Mozambique, river Zambezi, 2008



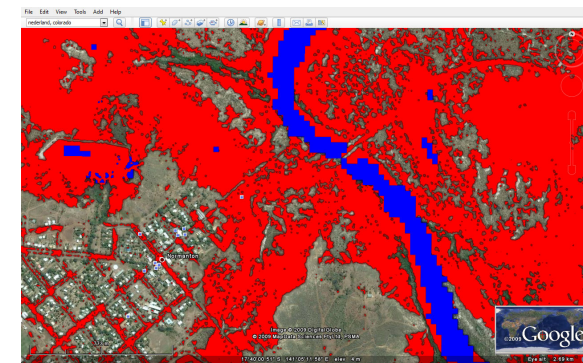
Vietnam, 2008



India and Nepal, river Koshi, 2008



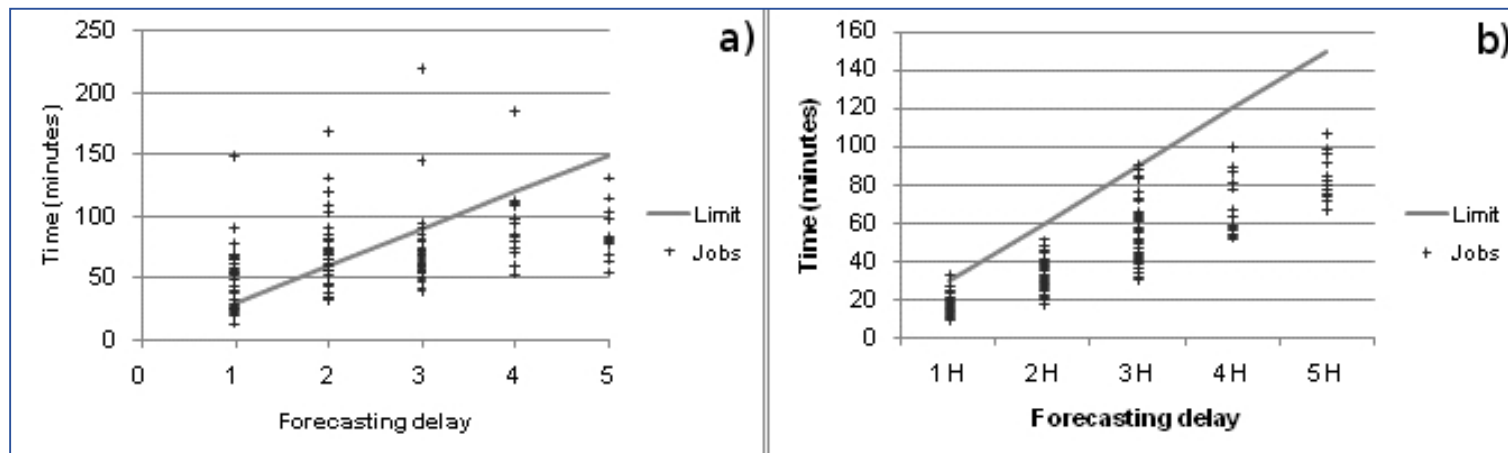
Zambia, river Zambezi, 2009



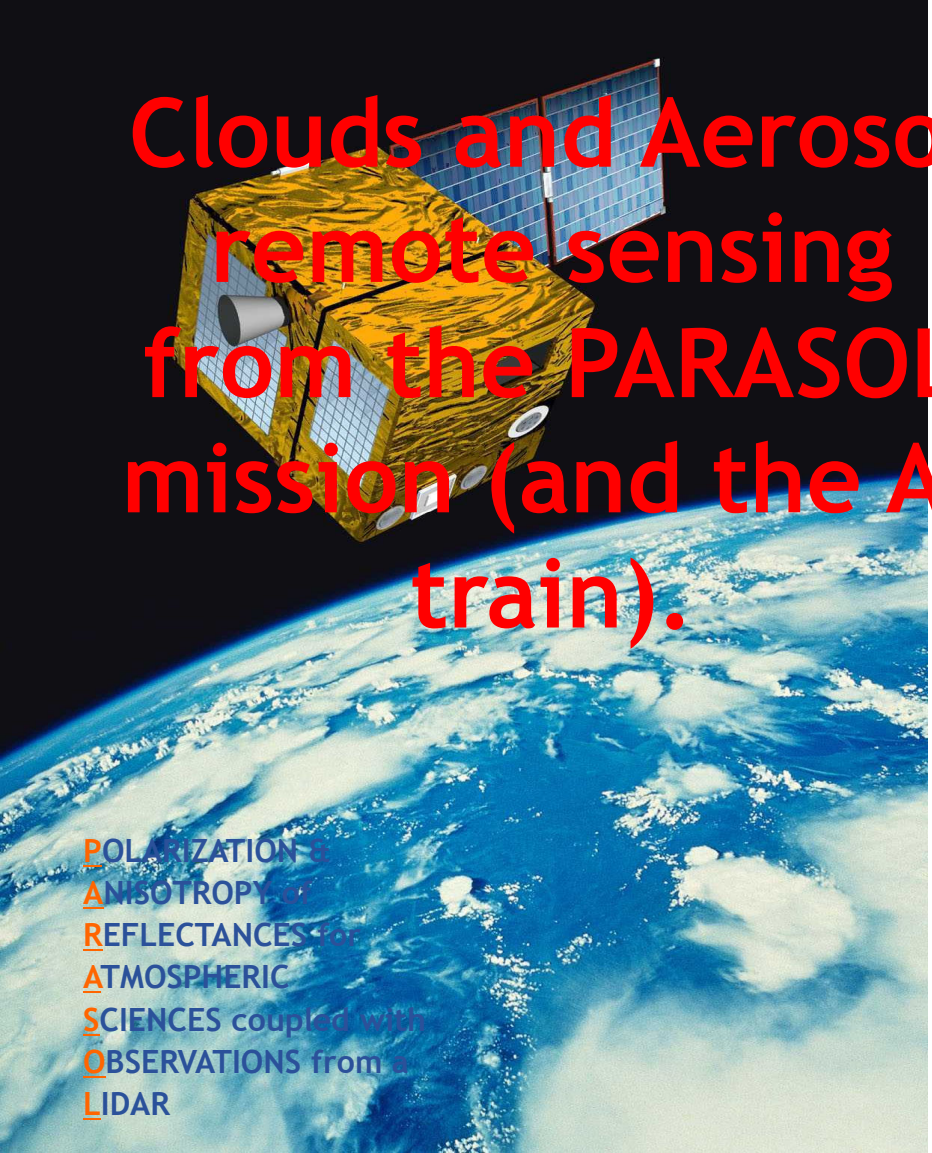
Australia, river Norman, 2009

V. Thieron, P-A Ayrat , EMA, France

- The forecast is the result of an ensemble of jobs
- (a) jobs sent with execution site assigned by EGEE
- (b) Parametric manager (Astalos et al., 2008)



- Sample of treated jobs and operational time limit (a: with classical grid using, b: with RRM-Grid using)



Clouds and Aerosol
remote sensing
from the PARASOL
mission (and the A-
train).

POLARIZATION
ANISOTROPY of
REFLECTANCES for
ATMOSPHERIC
SCIENCES coupled with
OBSERVATIONS from a
LIDAR

LOA, CNRS/U. Lille1
LATMOS, CNRS/Paris 6
LMD, CNRS/Paris 6
LSCE, CNRS/CEA

ICARE,
CNRS/CNES/U.Lille1

CNES

MODIS and CALIPSO
Teams (NASA)

- **EU Footprint : Risk assesment for pesticides**

- **I. Dubus – BRGM – then Footways S.A.S**

- Scenario: Climatological conditions, different soils, environment and pesticides
- Creation of a database including around 4 millions of scenarios
- 2-3 millions already executed
- Creation of start-up for the maintenance and exploitation of the database

- **Similar application with different approaches and objectives by the FKI in Berlin**

- First discussions

- (56) Earth Science Activity on Grid – M. Petitdidier
- (1) GiSHEO Grid-based Services for Education in Earth Observation.- D. Petcu, D. Gorgan
- (5) Multiscale study of O3 Tropospheric in middle Italy – A. Costantini
- (9) EnviMon – data acquisition and processing application for Environment monitoring – V. Sidorenco
- (13) Grid and Database driven earthquake mechanism determination – D. Weissenbach
- (20) EnviroGRIDS - Gridifying the Black Sea catchment to support its sustainable development A. Maier
- (40) FireStation on the grid - a step further on the adoption of OGC/SDI standards A. Pina et al.

- **ES SSC:**
 - fulfilment of the ES Community in regard to the infrastructure development – ESFRI, IT and to the need of specific tools (Geospatial.....)
- **Proposal SAFE : SSCs for A&A, Fusion and ES**
 - Data
 - Complex applications
 - Specific services
 - Geospatial services (OGC), Workflow, Parametric jobs...
- **Collaboration at different level with organisations, projects.....**

- **SEE-Grid –SCI UF 9-10 December 2009 – Istanbul**
<http://sgsuf.ceng.metu.edu.tr>
- **EGEEIII/UF April 2010 Upsala (SE)**
- **European Geophysical Union : 2-7 may 2010 in Vienna**
2 Earth Science & Grid sessions

Springer- Earth Science Informatics : special issue of 12 papers on « Grid computing in Geosciences »

Two ES papers at least submitted to the Journal of Grid Computing - EGEE special issue

Grid for hydrology applications: asked by the editor of the Journal of Hydrology