Work done and future plans

- Improve emission sources:
  - Agriculture and livestock emissions
  - Sea salt emissions
  - Fugitive emissions: paved road emissions
  - Biogenic emission factors: isoprene

- Implementation of the new DREAM model configuration (size distribution 8 bins).

- Provide an updated model simulation for the DAURE campaign:
  - Hindcast simulation
  - New emissions updates
  - CMAQv4.7 – CB05-aero5

- Publications:
  - Description of the meteorological conditions for DAURE
  - Modelling results of DAURE campaign
Modelling work

- All updates in emission and modelling setup are first tested on a hindcast simulation of 2004
- Improvements of CALIOPE system:
  - Agriculture and livestock emissions – Top-down approach from EMEP
  - Isoprene emissions updated
  - Sea salt contribution
  - BSC-DREAM8b
  - Fugitive emissions: paved road emissions – CSIC measurements

- Pending tasks:
  - Update to CMAQ4.7 – CB05-Aero5
  - Rerun DAURE simulations – Scheduled for February 2010

- Publications:
  - Meteorology: in preparation
  - Modelling: we will start after the new results
### Sea salt aerosol results

- Emissions of SSA from the open ocean are calculated as a function of wind speed and relative humidity following the parameterizations of Gong (2003) and Zhang et al. (2005).

- SSA emissions are speciated into Na⁺, Cl⁻, and SO₄²⁻, and are distributed by size to the accumulation and coarse modes.

- Thermodynamic equilibrium between the accumulation-mode and the gas phase (which now includes HCl) are treated within the ISORROPIA equilibrium module.

- Cl⁻, Na⁺ and SO₄²⁻ in the coarse mode are treated as inert tracers. For thermodynamic calculations, hydrochloric acid (HCl) has been added to the nonreactive species list.

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Meteorological description

- Paper being written:
  - The DAURE field campaign: meteorological overview
    - Description of main synoptic patterns
    - Relevant mesoscale features identified
    - Discussion of high-resolution Lagrangian backtrajectories with FLEXPART-WRF

- New available meteorological datasets:
  - Meteocat surface meteorological observations
  - Barcelona radiosoundings

Meteorological description – Winter campaign

- NW-N advection
- Sea-breeze circulations
- PCP event
- Low at SE IP
26/2/2009 5 UTC  

MS  |  BCN  

700 hPa  

MSY  

Arrival at 50 m a.g.l.  

Arrows every hour  

Big arrow – surface  

Small arrow – aloft  

27/2/2009 12 UTC  

MS  |  BCN  

700 hPa  

MSY  

Arrival at 50 m a.g.l.  

Arrows every hour  

Big arrow – surface  

Small arrow – aloft
Meteorological description – Summer campaign
Thanks for your attention