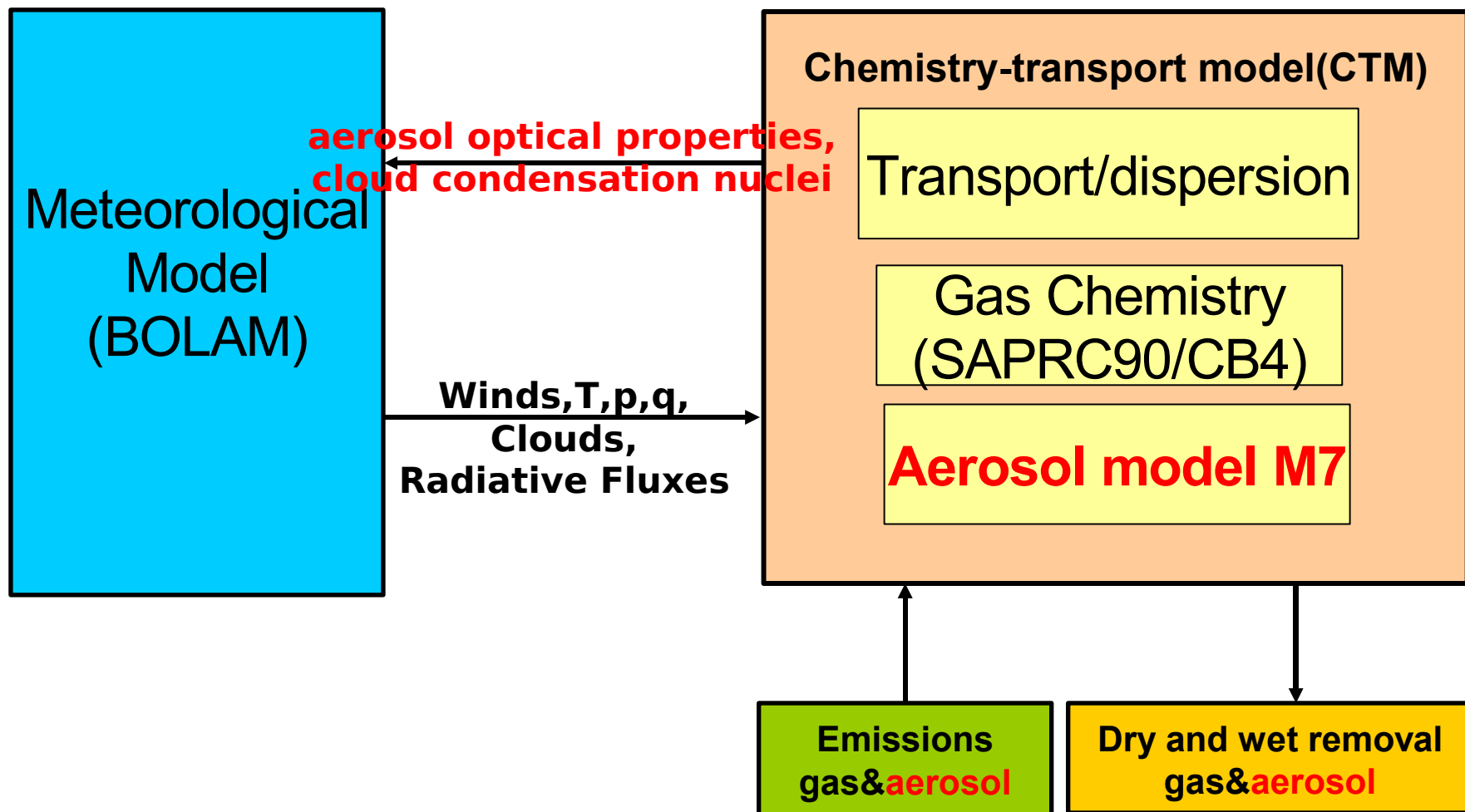
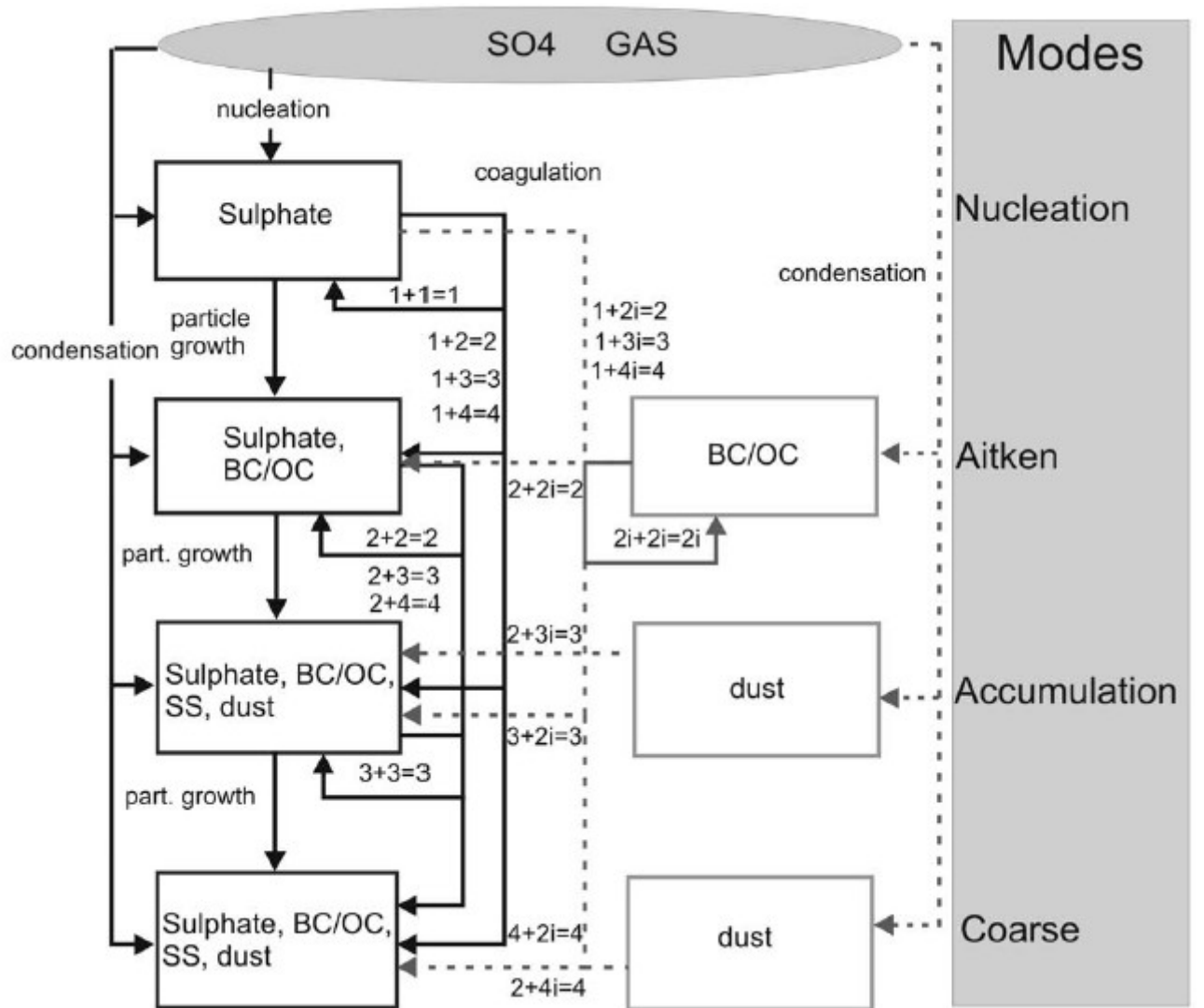


# Aerosol and BOLCHEM air quality model

# BOLCHEM flow chart



# Aerosol module –M7

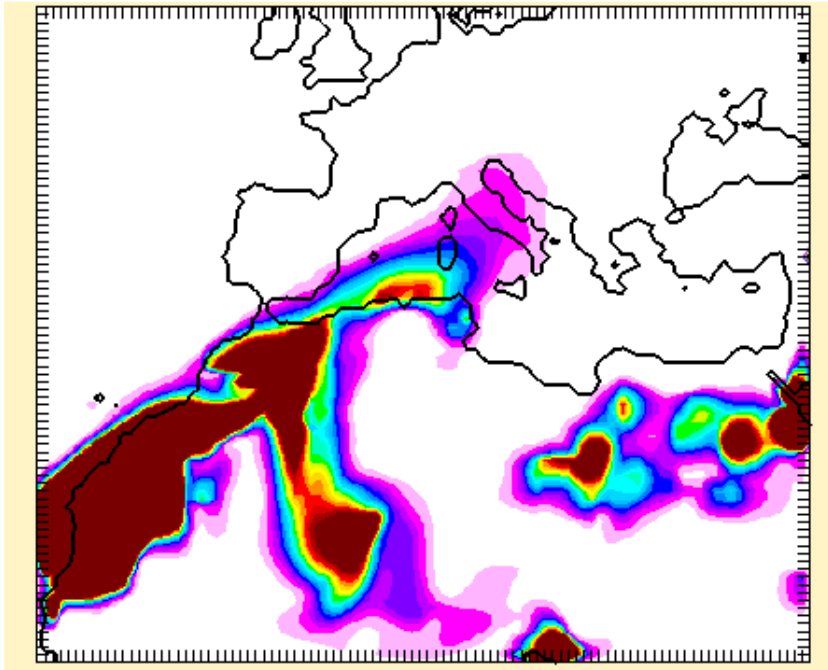


(Vignati et al., 2004)

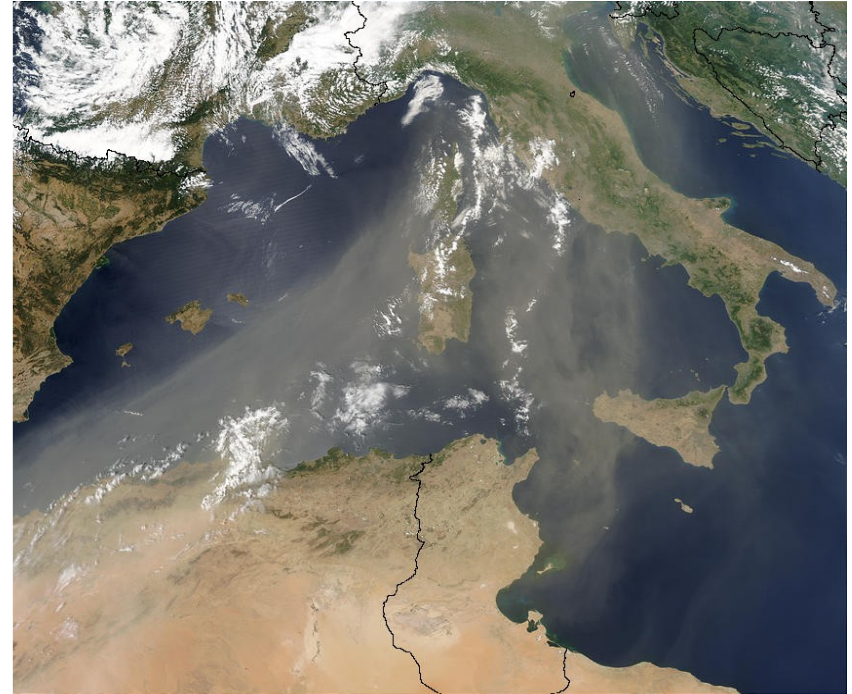
# What should we do in the future:

- **emissions:**
  - **dust**
  - **sea-salt**
  - **SOA**
  - **BC**
  - **primary OA**
- **dry deposition, sedimentation**
- **wet removal in-cloud and below-cloud**
- **aerosol-radiation interaction**
- **aerosol-cloud interaction???**
- **aerosol-gas interaction (equilibrium, uptake or heterogeneous chemistry??)**

# Dust event over Italy



BOLCHEM



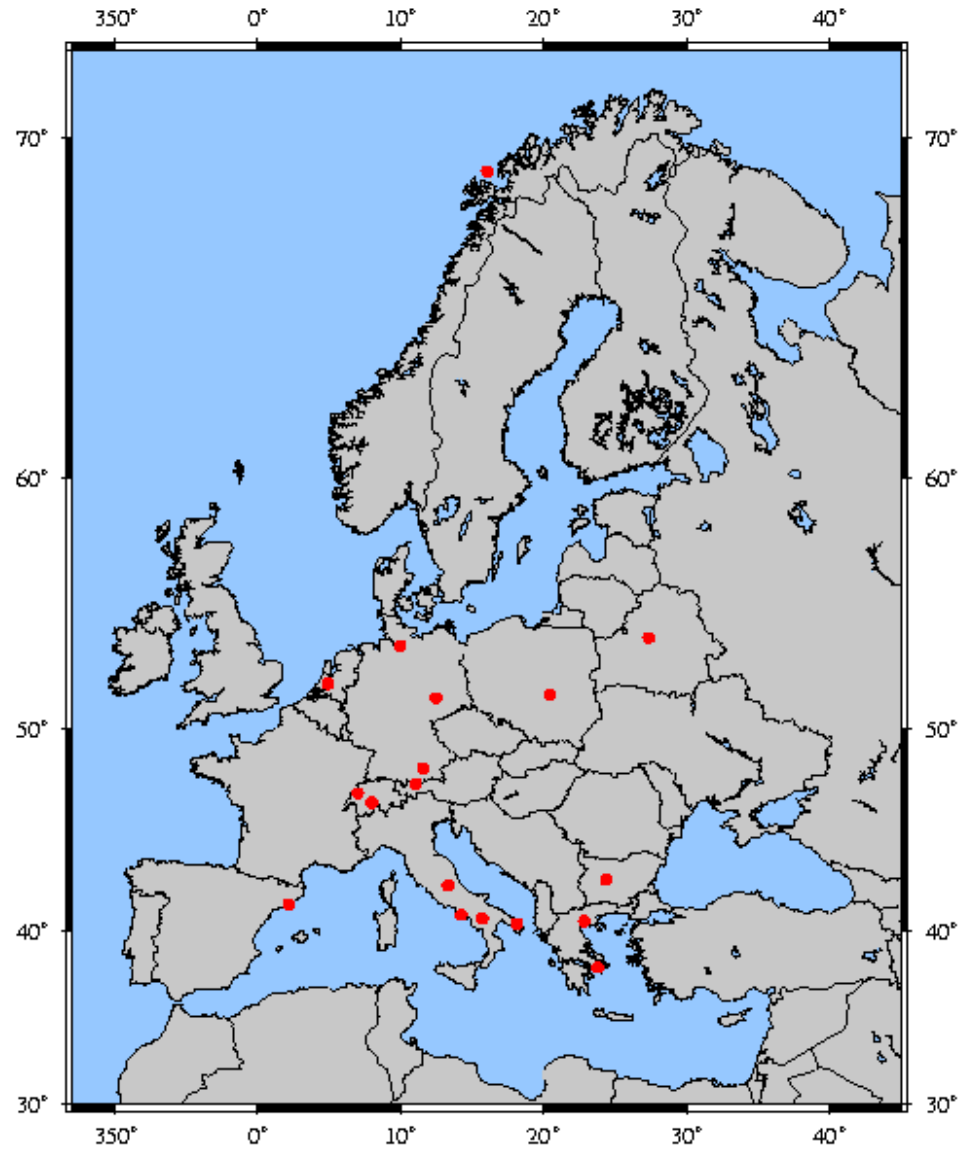
MODIS Aqua

July 16, 2003 On July 16, 2003, the Moderate Resolution Imaging Spectroradiometer (MODIS) on the Aqua satellite captured this image of a river of Saharan dust streaming out over the Mediterranean Sea and northeastward to Italy.

# REMOTE SENSING: LIDAR

## A European Aerosol Research Lidar Network to Establish an Aerosol Climatology: EARLINET

EARLINET was established in February, 2000 as a research project supported by the European Commission under the Fifth Framework Programme



# REMOTE SENSING: AERONET



<http://aeronet.gsfc.nasa.gov/>

From 1993-

Standardized instruments and processing

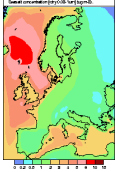
Provides: spectral optical depth

Infers size distribution for column

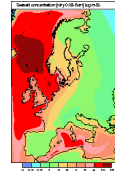
Levels of data: raw, quality-assured, climatological

Avignon (43N,4E)	Carpentras (44N,5E)	ETNA (37N,15E)
IMAA_Potenza (40N,15E)	IMC_Oristano (39N,8E)	Kolimbari (35N,23E)
La_Crau (43N,4E)	Lampedusa (35N,12E)	Lecce_University (40N,18E)
Marseille (43N,5E)	Messina (38N,15E)	Modena (44N,10E)
Realtor (43N,5E)	Rome_Tor_Vergata (41N,12E)	THALA (35N,8E)
Toulon (43N,6E)	Villefranche (43N,7E)	Vinon (43N,5E)

## Fine particles



## Fine and coarse particles



Foltescu et al., 2005: SEA SALT AEROSOL