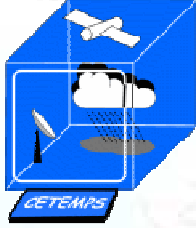


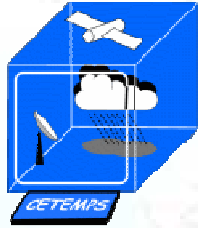
CETEMPS - Partner n.7 of FUTUREVOLC project

- The **Centre of Excellence in Telesensing of the Environment and Model-based Prediction Systems (CETEMPS)** is a joint effort of the Dept. of Physics and the Dept. of Electrical Engineering and Information of the University of L'Aquila, funded by the Ministry of Education and University of Italy starting from 2001
- It collects the expertise of several well-known scientists in the field of **remote sensing, atmospheric physics, meteorology, and hydrology**. It has several official research agreements with various institutions such as the Sapienza University of Rome, National Research Council, Italian Department of Civil Protection and the University of Cambridge, UK
- Nowadays it counts 11 researchers, 5 assistant researchers and 5 Ph.D. students.
- The activities of CETEMPS are divided into **5 thematic areas**: meteorology, hydrology, climatology, chemistry, and passive/active remote sensing.



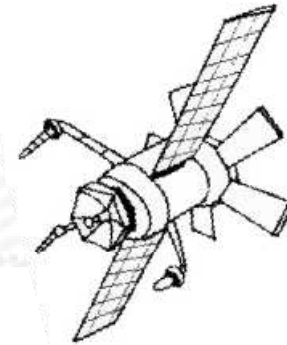
Role of CETEMPS in FUTUREVOLC

- A new C-band weather radar will be added to the IMO radar network, greatly expanding the radar coverage in Iceland. Two mobile X-band weather radars recently funded by ICAO, the International Civil Aviation Organisation, will also be part of the radar network. So the **potential of microwave radar systems for volcanic cloud detection at C and X band** (with possible polarimetric capability) will be fully exploited.
- The potential of **space-borne microwave radiometry**, which has not been clearly assessed so far, for ash detection and estimation will be thoroughly investigated. So algorithms for **microwave signatures and retrieval of ash cloud concentration** from space-borne microwave radiometers will be developed.

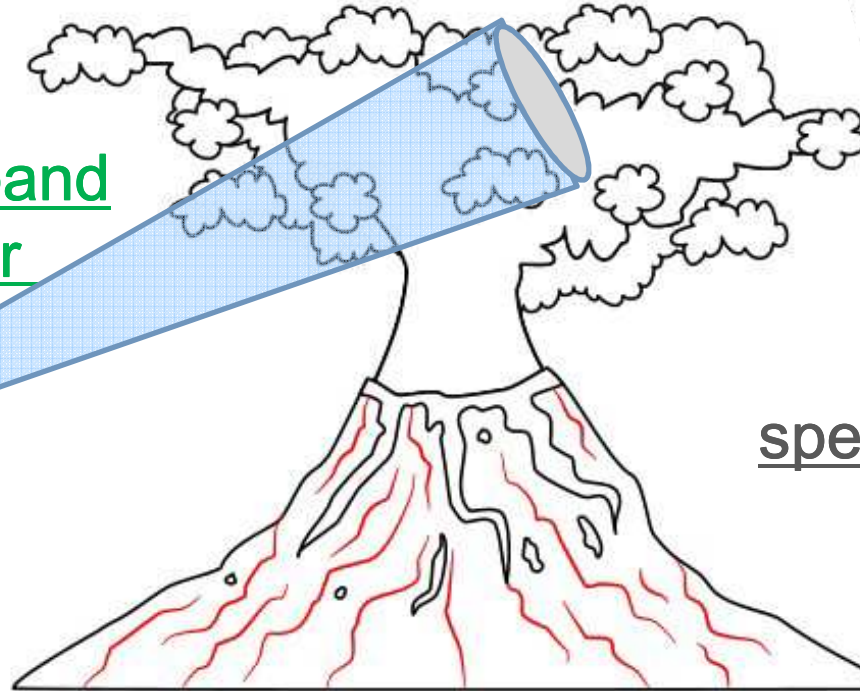


Remote sensing of volcanic eruption

SSMIS, DMSP satellite
Microwave radiometer

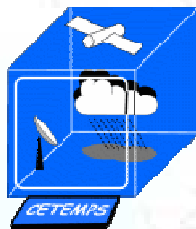


C-band and X-band
weather Doppler
radar



Ash size
spectrometer and
drilling





Implementation of the work and Key personnel

CETEMPS is involved in WP7, task 7.4 for development and implementation (with HIMET) of single and dual polarization weather radar retrieval algorithms.

| | | | |
|------|---|------|---|
| MS70 | Algorithm for estimation of source parameters from radar data | D7.4 | Radar backscattering and retrieval of volcanic plumes |
|------|---|------|---|

CETEMPS is involved in WP8, task 8.1 satellite-borne microwave retrieval algorithms and case study analysis

| | | | |
|------|---|------|--|
| D8.1 | Radiative transfer model and ash loading from satellites | MS87 | Microwave ash models and retrieval for space-borne microwave sensors |
| D8.2 | Case study analysis using satellite-borne microwave retrieval algorithms and sensor synergy | | |

KEY PERSONNEL:

Prof. Frank S. Marzano, is in charge of research team management and supervision of the research/development activity for satellite and radar division

Dr. Domenico Cimini, He is in charge of the research/development activity on microwave radiometry and satellite meteorology.

Eng. Saverio Di Fabio, is in charge of the research/development activity on radar and lightning meteorology.