

## ESA SUMMER SCHOOL 2012

### Report

With the 6<sup>th</sup> Summer School held in ESRIN, European Space Agency gave us the possibility to widely explore relevant topics in Earth Observation. It is worth noting that there was no fee for the school, and i think this again demonstrates how much importance ESA gives to the training of young scientists.

The school was basically an overview of the possibilities offered by Earth Observation, focusing on the importance of data assimilation into models.

During the first week lectures about the basics of data assimilation were given by Prof Alan O'Neill from National Centre for Earth Observation. Afternoon practicals helped us in explore deeply and understand this topic. Dr Johanna Tamminen from Finnish Meteorological Institute gave lectures on the importance of uncertainty quantification, spanning from the basics to Montecarlo test and models. Dr Claudia Kuenzer from German Aerospace Center explored the principles of remote sensing in three very intense lectures. Dr Jean-Noël Thépaut, Head of the Data Division of the Research Department at ECMWF, showed us the use of satellite data for weather prediction, from the basics of atmospheric soundings to the retrieval of parameters from the measured radiances.

During the second week Prof Martin Visbeck and Prof Peter Minnett described ocean observations using satellites, from infrared bands to visible and microwaves, explorations of sea surface temperature, sea surface salinity and ocean color, ocean currents and climate change phenomena. Prof Reiner Rummel gave three lectures about ESA GOCE mission, the principles of satellite gravimetry and about how information about gravity can be used in earth sciences. Dr Iarla Kilbane-Dawe showed us the importance of communication: these were particular lectures because he dealt with the importance of caring about our audience during presentations and in making ideas work. Dr Ernesto Lopez Baeza, finally, gave three lectures about passive radiometry, from physical principles to applications to soil moisture estimation from space.

Beyond the lectures side, the Summer School it was really interesting to share information with other 70 young phd students from all over the world. Having the opportunity of explaining my work during the poster sessions or finding collaborations for the future was a very important part of the school.

I think that a participation to a summer school is always a great opportunity for a PhD student, it is possible to fix some ideas or explore some different EO topics. Moreover ESA is one of the leading agencies in the world in Earth Observation and this surely adds value to the school.

Ruggero Giuseppe Avezzano, Geoinformation PhD Student at University of Rome Tor Vergata.