Plinius Conference Abstracts
Vol. 14, Plinius14-43, 2012
14th EGU Plinius Conference on Mediterranean Storms
and MEDEX Final Conference



# Measurements collected at the CNR ISAC atmospheric supersite in Rome during the HyMeX SOP 2012.

L. Baldini, G. Panegrossi, E. Adirosi, F. Angelini, S. Argentini, F. Barnaba, M. Campanelli, F. Costabile, F. Congeduti, S. Dietrich, G. P. Gobbi, E Gorgucci, G. Liberti, A. Mugnai, M. Petracca, N. Roberto, and A. Viola
CNR, Institute of Atmospheric Sciences and Climate, Roma, Italy (l.baldini@isac.cnr.it)

The atmospheric supersite of CNR-ISAC is composed of a set of technologically advanced instruments, dedicated to measuring parameters to support atmosferic science studies. The site is located in Central Italy, 30 km northeast from the coast of the Tyrrhenian Sea and 20 km southeast of the city of Rome. Instruments are installed in two large open areas: a grass field and the roof of the main building of ISAC. The site hosts measurement campaigns, during which instruments from partners can be deployed and properly managed.
The first HyMeX Special Observing Period (SOP), running from 5 September till 6 November 2012, has selected several hydrometeorological test beds, one of which is that of Central Italy, coordinated by the Sapienza University of Rome and CETEMPS L'Aquila.
ISAC instrumentation involved in this campaign (ongoing at time of abstract submission) includes instruments aiming both at measuring precipitation and at investigating precipitation formation mechanisms. The dual-polarization C-band radar Polar 55C is expected to provide volume observations of clouds and precipitation within a 120 km distance running specific scanning strategies to compare radar measurements with precipitation measurements collected at other instrumented sites or during instrumented flights. Ground based precipitation measuring instruments at the supersite include laser disdrometers for estimating drop-size and fall-velocity distributions.
Wind speed and direction profiles with a time resolution of 10 minutes within a 30 - 800 m range and vertical resolution of 25 meters are provided by a sodar system. A second one has been installed in the Presidential Park in Castel Porziano, closer to the Thyrrenian coast. In Rome downtown, the Prede photometer that estimates columnar precipitable water vapour amount and provides measurements of columnar optical and physical aerosol properties in the visible reagion. At ISAC supersite, a Lidar Ceilometer runs continuosly to provide information on aerosol vertical profile (0-5km), clouds altitude and mixing layer height and a sun photometer measures of the aerosol absorption coefficient in three different channels (blu, green, red).
A multiple receiver lidar using simultaneously Rayleigh-Mie and Raman (RMR) techniques profiles aerosol (from few hundreds of meters up to the stratosphere), temperature (mesosphere and upper stratosphere), or water vapour in the troposphere will be used depending on boundary conditions.
Finally, ISAC provides products based on the LINET lightning location network for high-precision detection of total lightning, ground strokes (CG) and cloud lightning (IC), with utilization of VLF/LF techniques. Examples of observations and preliminary results obtained in the HyMeX SOP will be illustrated.