Geophysical Research Abstracts,
Vol. 11, EGU2009-12119, 2009
EGU General Assembly 2009

LEONET(TM): a new spontaneous constituted Lidar network for climate change studies and monitoring transcontinental pollution

L. Sauvage and S. Lolli

Leosphere, 42 Rue de Clignancourt, Paris, France (lsauvage@leosphere.fr)

The EZ Lidar® community evolved fast in the last period with more than fourteen deployed instruments all over the world. LEOSPHERE gathered some user wills to group in order to share data measurements. From these premises is born LEONET™, a spontaneous new world network of EZ Lidar® instruments, which are compact and rugged eye safe UV Lidars with scanning capabilities, designed to monitor and study the atmospheric vertical structure of aerosols and clouds in a continuous way, night and day, unattended. LEONET™ output data, in netcdf format, have the same architecture of those of NASA Micro Pulse Lidar Network (MPLNET) and will be soon available to the scientific community through the AERONET data synergy tool which provides ground-based, satellite, and model data products to characterize aerosol optical and microphysical properties, spatial and temporal distribution, transport, and chemical and radiative properties. LEONET™ aim is to integrate the existing Nasa Lidar network to significantly contribute to climate change studies and monitoring transcontinental pollution.
In the future, EZ Lidars will be co-located, when possible, on the same sites of MPL Network, in order to create an ultimate station capable of measuring the Lidar Ratio coefficient, thanks to the sun photometers, fundamental for the Klett inversion, and the Angstrom coefficient.
In this paper, it is presented an overview of the network dimension outputs and methodologies as the backscattering and extinction coefficients, depolarization ratio, cloud layer heights and subsequent optical depths, provided to the limit of detection capability from a range of 50 m up to 20 km as well as the recent automatic height retrieval method of the different Planetary Boundary Layers (PBL). Further are presented some data examples from several diverse sites in the network