2011-2012 ICTP POSTGRADUATE DIPLOMA PROGRAMME
EARTH SYSTEM PHYSICS

Environmental Data Analysis (ESP-EDA)
(12 lectures : 18 hrs)

(prof. Fulvio Stel)

Lecture 1.
Definition of instrumental meteorology. Need for measurements and basic variables for atmospheric science. Direct, indirect and derived measurements. Conceptual model of a general monitoring system.

Lecture 2
Pressure definition and measurements. Hydrostatic and hydrodynamic components. Solar irradiance, and solar irradiance monitoring devices. Temperature definition and monitoring devices. Potential temperature and entropy.

Lecture 4
Wind field measurements. Mechanical, electronic and sonic anemometers. Points of strenght and weakness. Moisture measurements. Dew point and wet bulb temperature measurements. Psycrometric equation.

Lecture 6
Precipitation definition and monitoring devices. Rain gauges and disdrometers. Wind field and effects on rain measurements (side effect). Introduction to remote sensing and RADAR equation.