



One year of atmospheric measurements at Dome C, Antarctica

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An atmospheric field experiment, STABLEDC (STudy of the Atmospheric Boundary Layer Environmental at Dome C plateau station), was held at the French-Italian station of Concordia located over the Antarctic plateau at Dome C (Lat 75° 06' 06 S, Long 123° 20' 74 E, 3250 m a.s.l.) during 2004-2006. The response of the atmospheric boundary layer to the diurnally-varying forcing during the summer and the winter differs greatly. In the first part of the talk the basic mechanisms driving the behaviour of the planetary boundary layer during the year are studied. The time series of the temperature, the sensible heat flux, the wind speed, and the friction velocity, from January 2005 up to January 2006 are shown. The average diurnal cycles of the shortwave and longwave radiation up and down, net radiation, temperature, wind speed and sensible heat flux for summer, autumn, winter and spring are presented. In the second part of the talk we discuss the potential of a high resolution mini-sodar, which has been developed at ISAC/CNR, to determine the height of the turbulent layer, and the intensity of the thermal turbulence from the surface up to 50 m.