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Atmospheric boundary layer over the snow: results from the 2011-2012 experimental field at Dome C, Antarctica

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The characteristics of the turbulent processes under very stable conditions, and the mechanisms leading to the formation of the warming events in the interior of Antarctica are investigated using measurements from one year field experiment carried out at Concordia station at Dome C (east Antarctic Plateau). The experiment started on December 2011. The measurements were made with a surface layer mini-sodar (SLM-sodar) and a sonic anemometer. Radiation components and heat flux into the snow were also measured. The SLM-sodar operated alternatively in two configurations: high vertical resolution (2 m) to study the fine structure of the surface layer; low vertical resolution to ensure the maximum vertical extensions (800 m) needed to observe the atmospheric boundary layer structure in the presence of warming events. Preliminary results from the experimental campaign are presented.