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MEASURING THE SURFACE LAYER TURBULENCE AT DOME C

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The high Antarctic plateau fulfils several criteria that make it an ideal location for astronomical observatories. Over the past 3 years, Dome C, one of the most promising site, has been studied by astronomers. One of the key parameters, the optical turbulence, was shown to be extremely good above a height of 30m above the ground (Lawrence et al. 2004). However more recent measurements (Aristidi et al 2005) have also found that below that height the surface inversion is the cause of a large amount of turbulence which degrades significantly the ground observing conditions. In order to quantify and study the statistical properties of the surface layer's turbulence, we have installed an array of ultra-sonic anemometers on a 30m tower. These instruments measure not only the temperature and wind speed profile along this range but also the turbulence parameter C_n^2 thanks to their high sampling rate. We present the method and early results taken in the first half of 2006.