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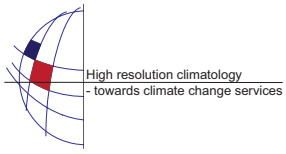

LES modeling of a diurnal cycle driven by WRF

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This study investigates LES in meteorological applications that involve realistic background atmospheric environment. This is accomplished by coupling the mesoscale meteorological model WRF with the LES code by Sullivan et al (1994). In this context, the diurnally varying atmospheric boundary layer is simulated using the above mentioned LES code. Initial data of wind, temperature, humidity, TKE vertical profiles and the surface forcing (heat/humidity fluxes) are taken from a WRF simulation in two different sites in flat regions. The geostrophic forcing is computed at given isobaric levels by calculating the horizontal gradients of the geopotential height in 9 squared grid points along the WRF grid. In particular in this work the various ways the geostrophic forcing can be calculated will be explored and results compared with those obtained with the LES code.