



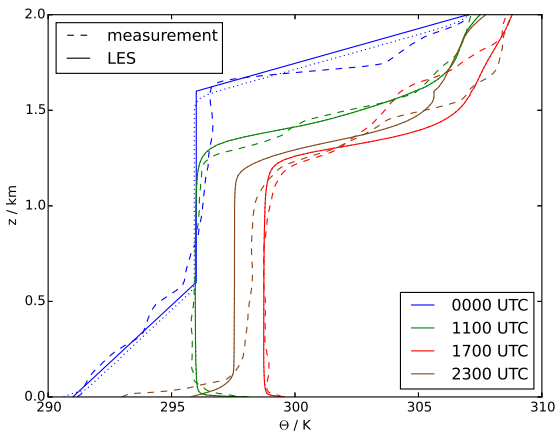
The impact of the diurnal cycle of the atmospheric boundary layer on physical variables relevant for wind energy applications

Antonia Englberger, Andreas Dörnbrack

DLR, LMU

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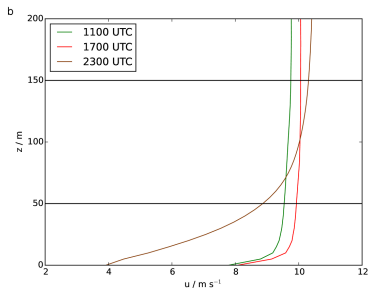
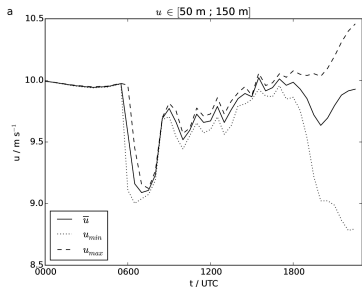
Diurnal cycle validation with the IOP data from 01.07.2011



→ Successful reproduction of the temporal evolution of the ABL with our LES model

EULAG.

Impact of the individual phases on physical variables relevant for wind energy



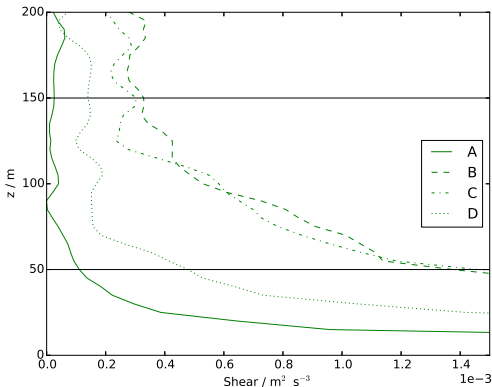
→ Larger vertical gradient of u in SBL phase.

Impact of the surface heterogeneity on shear

different obstacles simulating heterogeneous surface:

A: homogeneous surface; B: 100 m × 100 m × 5 m and 100 m spacing;

C: 100 m × 100 m × 10 m and 100 m; D: 100 m × 100 m × 5 m and 200 m



→ Surface heterogeneity has a strong effect on shear.