Large eddy simulation of turbulent flow fields over hilly terrains

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Purpose To examine the effects of inflow turbulence generation methods and subgrid-scale models on the predication accuracy of turbulent flow fields over hilly terrains.

Outline Flow patterns and turbulent statistics as well as coherence turbulence structures around hilly terrains are systematically studied by large eddy simulation (LES).

Result The vertical distribution of mean velocity and turbulence intensity around hilly terrains are well reproduced by LES with two different inflow turbulence generation methods. The small open-wake region are accurately predicted by Standard Smagorinsky model.

Computing system: OCTOPUS

node-hour	920 points
memory used	60 GB
vector per	85 %
parallelize	2~4 nodes