



Large eddy simulation of rough-wall-bounded turbulent channel flow using localized dynamic closure and high-order numerical scheme

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The results of large-eddy simulation for turbulent rough-wall-bounded channel flow are presented. The model is based on a high order fully conservative finite-difference numerical scheme and mixed localized dynamic closure. A number of numerical experiments with different spatial resolution and domain sizes were carried out using parallel implementation of the model. Results of numerical experiments were compared with observation and high-Reynolds DNS data for turbulent channel flow. It is shown that velocity variances and its spectra can be easily improved using approximate inverse filtering. In particular, it is demonstrated that "defiltered" velocity variability is invariant with respect to spatial resolution. The collapse of normalized "defiltered" velocity spectra is also shown.