

Abstract Submitted
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An investigation of slip wall boundary condition for wall-modeled large-eddy simulation¹ HYUNJI JANE BAE, ADRIAN LOZANO-DURAN, SANJEEB BOSE, PARVIZ MOIN, Stanford Univ — Wall models for large-eddy simulation are necessary to overcome the resolution requirements near the wall for high Reynolds number turbulent flows. In the present study, the slip wall boundary condition is examined (Bose and Moin, *Phys. Fluids*, 2014). The optimal slip length and its dependence on Reynolds number, grid size, subgrid scale model, etc. is investigated in turbulent channel flows up to $Re_\tau = 4200$. Two families of slip wall models are introduced. The first is derived from the Navier Stokes equations, and the second is based on error minimization in two different filter levels. These new and existing models are tested and compared to the optimal slip length and the filtered direct numerical simulation results.

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Hyunji Bae
Stanford Univ

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