

Abstract Submitted
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Towards a Dynamic DES model¹ PRAMOD SUBBAREDDY, GRAHAM CANDLER, University of Minnesota — Hybrid RANS/LES methods are being increasingly used for turbulent flow simulations in complex geometries. Spalart's detached eddy simulation (DES) model is one of the more popular ones. We are interested in examining the behavior of the Spalart-Allmaras (S-A) Detached Eddy Simulation (DES) model in its "LES mode." The role of the near-wall functions present in the equations is analyzed and an explicit analogy between the S-A and a one-equation LES model based on the sub-grid kinetic energy is presented. A dynamic version of the S-A DES model is proposed based on this connection. Validation studies and results from DES and LES applications will be presented and the effect of the proposed modification will be discussed.

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