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A Self-Adapting Turbulence Model for Hybrid RANS/LES[1] JASON GADEBUSCH, BLAIR PEROT, University of Massachusetts, Amherst — A self-adapting turbulence model is discussed which automatically adapts to the mesh provided so that as much turbulence as possible is resolved, and only the subgrid scale turbulence is modeled. The model automatically performs RANS, LES, or DNS depending on the mesh provided to it. Perturbation of the initial conditions does not affect the model. A smooth RANS initial condition on an LES mesh will eventually result in an LES solution. Both two-equation and Reynolds stress transport equation versions of the model are presented. Results are shown for low and high Reynolds number decaying turbulence.

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