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Extending the Active Model-Split to Compressible Flow CLARK PEDERSON, TODD OLIVER, The University of Texas at Austin, SIGFRIED HAERING, Argonne National Lab, ROBERT MOSER, The University of Texas at Austin — Hybrid RANS/LES methods have shown success in accurately predicting a wide range of turbulent scales, while keeping computational cost low. Nevertheless, their predictive accuracy is limited by shortcomings such as modeled-stress-depletion and scalar grid measures. Haering, Oliver, and Moser developed an "active model-split" (AMS) to address many of these shortcomings. This model splits the unresolved turbulent stress into a mean and fluctuating portion, each with their own model. The AMS has shown improved accuracy in several incompressible test cases. In order to allow more complex test cases, this new model has been applied to the compressible flow equations and implemented in SU2. Results are presented for several compressible test cases, including supersonic channel and boundary layer flows and the Bachalo and Johnson transonic, axisymmetric bump.

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