



Adaptive wall functions and near-wall behavior in turbulence modeling

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In many CFD applications, grid resolution is still insufficient and accurate wall functions are required. Wall functions are based on the universal character of the law-of-the-wall. We will first present shortcomings of some existing adaptive wall functions. Earlier formulations assume zero derivative boundary condition for the turbulent kinetic energy. However, this is not true throughout the entire boundary layer. The buffer region presents a challenge to the adaptive approach. Based on more adequate assumptions and boundary conditions, more accurate analytical solutions will be derived. The aim is to present an efficient and robust approach for various turbulence models.