Mathematics > Analysis of PDEs

Large Eddy Simulation for Turbulent Flows with Critical Regularization

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In this paper, we establish the existence of a unique "regular" weak solution to the Large Eddy Simulation (LES) models of turbulence with critical regularization. We first consider the critical LES for the Navier-Stokes equations and we show that its solution converges to a solution of the Navier-Stokes equations as the averaging radii converge to zero. Then we extend the study to the critical LES for Magnetohydrodynamics equations.

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