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Well posedness theory for some regularized models of turbulence

Generalizing the Navier-Stokes-α model, Fried and Gurtin recently introduced the Navier-Stokes-$\alpha\beta$ equations, as a turbulence model with a solid continuum mechanical foundation. An attractive feature of this model is that boundary conditions arise naturally. In this talk, we consider the so-called wall-eddy boundary conditions, a replacement of the no-slip boundary conditions. We will discuss some results on the well posedness of the problem. If time permits, we will also discuss a model of turbulence with degenerate coefficients.