

1048-35-101

Luigi C Berselli* (berselli@dma.unipi.it), Dipartimento di Matematica Applicata "U.Dini",
Universita' di Pisa, Via F. Buonarroti 1/c, I-56127, ITALY, PISA, Italy. *Analysis of an anisotropic
scale similarity LES model.*

We propose and give some mathematical analysis for a Large Eddy Simulation model which involves regularization only in the horizontal variables. The method we consider, which fits into the class of *scale similarity models*, is similar to the "Simplified Bardina model" introduced by Layton and Lewandowski (2006). We are able to prove that our new model has good mathematical properties (existence and uniqueness in appropriate Sobolev space). The mathematical foundation is one of the first steps for the validation, even if numerical experiments on realistic problems will be the necessary further step. (Received January 30, 2009)