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An overview on Reduced Order for Large Eddy Simulation turbulence models

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In this talk, we present an overview of Reduced Order Modelling (ROM) for fluid flows based upon Large Eddy Simulation (LES) turbulence models, in particular, the Smagorinsky model. We present different approaches for the construction of the reduced order models. We present some Reduced Basis Models for which a posteriori error estimators are developed in order to select properly the basis functions. Different strategies for recovering the reduced pressure are presented. Moreover, non-linearities of the Full Order Model (FOM) must be treated in an efficient way. For this purpose, we present strategies to linearize the non-linear terms that comes from the FOM. Finally, some numerical results are presented for different LES turbulence models.

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