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Turbulence spectral tensor modelling

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ABSTRACT. In this work we show how the Rapid Distortion Theory (RDT) model for the energy spectrum tensor preserves the important features that characterize the aforementioned spectrum. Therefore, it constitutes an admissible option for a closure model and a starting point for more sophisticated closure models, which should linearise according to it. Since the RDT energy spectrum tensor model is a first-order linear system of partial differential equations plus an algebraic restriction due to incompressibility, we deal with the existence and persistence of solutions in a set of functions with the specific properties that characterize that tensor..