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Parametric Dependence of Strain and Vorticity in Homogeneous Shear Flow on Reynolds Number and Shear Parameter JUAN ISAZA, LANCE COLLINS, Cornell University — The combined role of the Shear Parameter, $S^* = Sk/\epsilon$, and the Reynolds Number in Homogeneous Shear Flow is studied using Direct Numerical Simulations (DNS). Particular attention is given to enstrophy, strain, their production and geometrical statistics. The parametric investigation involves DNS of 512^3 with Shear Parameter values between 10 and 50 and Reynolds Number above 40. This study is motivated by some of the results reported by Kholmyansky *et al*, [Phys Fluids 13, 2001]. The results at high values of the shear parameter are compared with the prediction of Rapid Distortion Theory.

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