Transient Growth for a Shear Flow Model JEFF MOEHLIS, LINA KIM, University of California Santa Barbara — We investigate transient growth due to the linear interaction between streaks and streamwise vortices for a nine-dimensional ordinary differential equation model for sinusoidal shear flow, in which fluid between two free-slip walls experiences a sinusoidal body force. We determine how such transient energy growth depends on initial conditions, Reynolds number, and aspect ratio, and also the importance of transient growth for turning on non-linear effects which can lead to sustained turbulence.

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