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Effects of Viscosity Switch in the Evolution of a Free Shear Layer UJJAYAN PAUL<sup>1</sup>, J N Centre for Advanced Scientific Research — A free shear layer starting from smooth initial conditions can lose accuracy during time evolution and then blow up at a critical time. This difficulty arises intrisically from the equations of motion. An artificial dissipation at each time step is applied. Since a real fluid will always be viscous, the artificial dissipation is not non physical after all. An adaptive grid size is used to resolve a flow at very small scales since a constant grid will always fail to resolve micro structures. As the flow passes the critical time point large scale motion strains the sheet and the problem of an increasing number of singularities is eliminated using a vortex switch.

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