

Abstract Submitted
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The Moore Singularity in the Evolution of a Vortex Sheet through Longitudinal Diffusion UJJAYAN PAUL¹, Jawaharlal Nehru Centre for Advanced Scientific Research — The phenomenon of singularity in vortex sheets starting from analytic initial data has been studied in detail by various authors. Standard numerical solution of the vortex sheet using line vortex approximation indicates a singularity at a finite critical time. However, the possibility of a weak solution to the vortex sheet problem at all time has been raised before. The weak solution is based on the convergence of the vortex blob method in the limit of zero blob size. Regularization techniques have been applied on point vortex models. In a real fluid the problem of finite time singularity is eliminated by viscosity. Here we shall discuss and compare two possible regularization techniques applied on a vortex sheet model, which allows us to continue the evolution much beyond the critical time as predicted by Moore.

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