

Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

A Panel Method for Vortex Sheet Roll-Up in 3D Flow ROBERT KRASNY, LEON KAGANOVSKIY, University of Michigan — A panel method is described for computing vortex sheet roll-up in 3D flow. The sheet surface is represented as a set of quadrilateral panels with particles at the vertices and possibly also along the edges. The panels are adaptively subdivided to maintain resolution as the sheet rolls up. The set of all panels has a quadtree structure which is used to perform neighbor searches. The particles are advected by a regularized Biot- Savart integral and the induced velocity is evaluated by a multipole treecode. The panel method improves upon a previous filament representation of the sheet surface. The code is applied to compute the collision of two vortex rings.

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Date submitted: 04 Aug 2005

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