Abstract Submitted for the DFD09 Meeting of The American Physical Society

## Lagrangian Panel Method for Vortex Sheet Motion in 3D Flow<sup>1</sup>

ROBERT KRASNY, University of Michigan, HUALONG FENG, Nanjing University of Science and Technology, LEON KAGANOVSKIY, New College of Florida — A Lagrangian panel method is presented for computing vortex sheet motion in 3D flow. The sheet is represented by a set of quadrilateral panels with a quadtree structure. The panels have active particles that carry circulation and passive particles used for adaptive panel refinement. The Biot-Savart kernel is regularized and the particle velocity is computed using a treecode. Results are presented for the azimuthal instability of a vortex ring and the oblique collision of two vortex rings.

<sup>1</sup>Supported by NSF.

Robert Krasny University of Michigan

Date submitted: 06 Aug 2009

Electronic form version 1.4