

*Drexel University Partial Differential Equations
and Applied Mathematics Seminar*

PRESENTS:

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**A Class of Vortex Filament Solitons in Fluids,
Plasmas and Superconductors**

Abstract: We consider the Uby-Isichenko-Yankov equation (UIY) for vortex filament dynamics in plasmas and superconductors. This is a perturbation of the Localized Induction Equation (LIE), which is itself an integrable model of filament motion in an ideal fluid. We present a novel class of solutions for a time-modulated modification of UIY; namely, vortex configurations which are evolving spherical curves of varying radius. These solutions can be considered as generalizations of a well-known class of soliton solutions for LIE.

Monday, October 19th, 2:00PM. Korman Center, Room 245. Drexel University. Philadelphia, PA 19104.

www.math.drexel.edu/~jdoug/seminar