

56th Midwest PDE Seminar – Program
Department of Mathematics, University of Notre Dame

Saturday, December 3, 2005

- **9:00-9:50**, *Registration and Refreshments*, Hurley 257. (Talks in Hayes-Healy 127.)
- **9:50-10:00**, *Welcoming Remarks*, William Dwyer, Chair of Mathematics Department.
- **10:00-10:50**, Emmanuele DiBenedetto, Vanderbilt University, *Harnack estimates for quasilinear degenerate parabolic equations*.
- **11:00-11:50**, James Colliander, University of Toronto, *Recent progress on nonlinear Schrödinger equations*.
- **11:50-1:30**, *Lunch*.
- **1:30-2:20**, Alexander Shnirelman, Concordia University, *Microglobal analysis of the Euler equations*.
- **2:30-3:20**, Mikhail Feldman, University of Wisconsin, *Shock reflection and free boundary problems*.
- **3:20-3:40**, *Tea & Coffee Break*.
- **3:40-4:30**, Manoussos G. Grillakis, University of Maryland, *On the existence of rough solutions for the cubic defocusing nonlinear Schrödinger equation*.

Short Talks – Session I, Hayes – Healy 127

- **4:40-5:00**, Feride Tiglay, University of New Orleans, *The periodic Cauchy problem of an Euler-Poisson equation*.
- **5:00-5:20**, Gautam Iyer, University of Chicago, *A stochastic Lagrangian representation of the 3-dimensional Navier-Stokes equations*.
- **5:20-5:40**, Jesenko Vukadinovic, University of Chicago, *The Doi model for liquid crystalline polymers*.
- **5:40-6:00**, Dan-Andrei Geba, MSRI and University of California, Berkeley, *New results in nonlinear wave equations*.

Short Talks – Session II, Hayes – Healy 129

- **4:40-5:00**, Peter Hinow, Vanderbilt University, *Tumor suppressor p53's DNA binding obeys reaction-diffusion kinetics*.
- **5:00-5:20**, Huseyin Coskun, University of Iowa, *An inverse problem formulation for ameboid cell movements*.
- **5:20-5:40**, Chunshan Zhao, University of Iowa, *Locating the peak(s) of least-energy solutions to a quasilinear elliptic Neumann problem*.

6:30, Dinner, Gold Room, North Dining Hall

Short Talks – Session I, Hayes – Healy 127

- **8:30-8:50**, Misha Perepelitsa, Northwestern University, *The existence of weak, small energy solutions for the equations of motion of 3D compressible, viscous fluid flows with the no-slip boundary conditions.*
- **8:50-9:10**, Roman Shvydkoy, University of Illinois at Chicago, *Inherent instability of fluid flows.*
- **9:10-9:30**, Jun Chen, University of Wisconsin at Madison, *Transonic flows in a 2-D nozzle governed by full Euler equations.*

Short Talks – Session II, Hayes – Healy 129

- **8:30-8:50**, Marian Bocea, University of Utah, *Partial differential equations related to dielectric breakdown and polycrystal plasticity.*
- **8:50-9:10**, Katarina Jegdic, University of Houston, *Analysis of transonic regular reflection for the nonlinear wave system.*
- **9:10-9:30**, Stephen Pankavich, Indiana University, *The Vlasov Poisson system with infinite mass and energy.*

-
- **9:40-10:30**, Alberto Bressan, Penn State University, *New techniques in the analysis of nonlinear wave equations.*
 - **10:40-11:30**, Patricia Bauman, Purdue University, *Classical solutions to the time-dependent Ginzburg-Landau equations in three dimensions.*
 - **11:40-12:30**, Peter Constantin, University of Chicago, *Nonlinear Fokker-Planck Navier-Stokes systems.*
-