

Wednesday, July 23

MS53

Nonlinear Fluid Equations: Dissipated Energies and Equilibration - Part I of III

3:30 PM - 5:30 PM

Room: Fermi Building: Room 7

For Part II, see [MS62](#)

The vast majority of nonlinear fluid models incorporates effects that cause the system to equilibrate in the long time limit. Such effects origin from molecular friction, surface tension etc. Typical examples are the Euler and Navier-Stokes equations in highly viscous regimes, but we also think of predominantly dissipative models like thin film equations or nonlinear Schroedinger equation with scattering effects.

For the determination of the speed of equilibration, energies and entropies provide powerful tools. The search for such dissipated quantities and the precise estimation of their rates of decay in the above mentioned systems has been of wide interest. Even in situations where equilibration cannot be proven, boundedness of energy-related quantities leads to valuable a priori estimates for existence proofs, indicates qualitative properties or serves as control for smoothness. In the framework of this minisymposium, we aim at the exchange of ideas among people working in quite different fields of fluid dynamics and nonlinear dispersive equations concerning the construction of energies and the exploitation of their properties.

Organizer: Maria Gualdani

University of Texas, Austin, USA

Daniel Matthes

University of Pavia, Italy

NEW 3:30-3:55 Regularity of Solutions to the Navier-Stokes Equations Evolving from Small Initial Data in a Critical Space [abstract](#)

Pierre Germain, ; *Natasa Pavlovic*, ; Gigliola Staffilani,

4:00-4:25 A Mean-field Model in Price Formation and Dynamical Equilibria [abstract](#)

Maria Gualdani,

4:30-4:55 Long Time Existence for the Rapidly Rotating Shallow-water and Euler Equations [abstract](#)

Eitan Tadmor,

NEW 5:00-5:25 Title Not Available at Time of Publication [abstract](#)

Marco di Francesco,

Cancelled Moved to [MS62](#). Optimal Transport for the System of Isentropic Euler Equations

Michael Westdickenberg, Alexis F. Vasseur,

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