

Workshop on Partial Differential Equations and Fluid Mechanics

Monday 5th - Friday 9th July 2010

Organisers: James Robinson and José Rodrigo

All lectures will take place in **B3.03** in the Zeeman Building (Mathematics Department)

Monday 5 July:

09:30 - 10:30	John Gibbon (Imperial)	<i>The Dynamics of a Gradient of Potential Vorticity</i>
10:30 - 11:00		Coffee in the Mathematics Institute Common Room
11:00 - 12:00	Gregory Seregin (Oxford)	<i>Regularity Problem for the Navier-Stokes Equations</i>
12:00 - 13:00	Igor Kukavica (California)	<i>Local Well-posedness for a Fluid-structure Interaction Model</i>
13:00 - 14:30		Lunch in the Mathematics Institute Common Room
14:30 - 15:30	Thierry Gallay (Grenoble I)	<i>The Stabilizing Effect of Fast Rotation on Two-dimensional Vortices</i>
15:30 - 16:00		Tea in the Mathematics Institute Common Room
16:00 - 17:00	Charles Doering (Michigan)	<i>Progress and Problems in the Analysis of (Turbulent) Energy Dissipation</i>
17:30		Cheese and Wine in the Mathematics Institute Common Room

Tuesday 6 July:

09:30 - 10:30	Susan Friedlander (California)	<i>Advection-Diffusion Equations and Magnetogeostrophic Turbulence</i>
10:30 - 11:00		Coffee in the Mathematics Institute Common Room
11:00 - 12:00	Andrei Fursikov (Moscow)	<i>Unboundedness of Stable Invariant Manifolds and Related Objects for Navier-Stokes System and Some Other Evolution PDE</i>
12:00 - 13:00	Diego Córdoba (Madrid)	<i>Well-posedness for the Muskat Problem</i>
13:00 - 14:30		Lunch in the Mathematics Institute Common Room
14:30 - 15:30	Josef Málek (Prague)	<i>On implicitly Constituted Incompressible Fluids</i>
15:30 - 16:00		Tea in the Mathematics Institute Common Room
16:00 - 17:00	Charles Fefferman (Princeton)	<i>Almost-sharp-front Solutions of the Surface QG Equation</i>

Continued overleaf...



Wednesday 7 July:

09:30 - 10:30	Michele Bartuccelli (Surrey)	<i>Explicit (and Sharp, Hopefully) Estimates for the Dissipative Length Scale and Corresponding Global Attractor Dimension for the Swift-Hohenberg Equation on the Torus in One and Two Space-dimensions</i>
10:30 - 11:00		Coffee in the Mathematics Institute Common Room
11:00 - 12:00	Isabelle Gallagher (Paris VII)	<i>Semiclassical and Spectral Analysis of Oceanic Waves</i>
12:00 - 13:00	Alexis Vasseur (Texas)	<i>Regularity of Solutions of Some Non Linear Integral Variational Problems</i>
13:00 - 14:30		Lunch in the Mathematics Institute Common Room
14:30 - 15:30	Robert Kerr (Warwick)	<i>Exploring Necessary Conditions for Singularities Using Vortex Dynamics</i>
15:30 - 16:00		Tea in the Mathematics Institute Common Room
16:00 - 17:00	Sergei Chernyshenko (Imperial)	<i>Global Stability Analysis of Fluid Flows Using Sum-of-Squares Polynomials</i>
19:00		Coach will leave for the conference dinner from the back of the Mathematics Department (returning to accommodation at 23:00)

Thursday 8 July:

09:30 - 10:30	Darryl Holm (Imperial)	<i>Euler's Fluid Equations: Optimal Control vs Optimization</i>
10:30 - 11:00		Coffee in the Mathematics Institute Common Room
11:00 - 12:00	Peter Constantin (Chicago)	<i>Remarks on Complex Fluids Models</i>
12:00 - 13:00	Alexey Cheskidov (Chicago)	<i>On Solutions of the 3D Navier-Stokes Equations in the Largest Critical Space</i>
13:00 - 14:30		Lunch in the Mathematics Institute Common Room
14:30 - 15:30	Milton Lopes Filho (Brazil)	<i>On the vortex-wave System</i>
15:30 - 16:00		Tea in the Mathematics Institute Common Room
16:00 - 17:00	Luigi Berselli (Pisa)	<i>On the Vanishing Viscosity Limit for the 3D Navier-Stokes in Bounded Domains</i>

Friday 9 July:

09:30 - 10:30	Claude Bardos (LJLL)	<i>Besov Spaces and Euler Equation</i>
10:30 - 11:00		Coffee in the Mathematics Institute Common Room
11:00 - 12:00	Roman Shvydkoy (Chicago)	<i>Stationary Singular Solutions to the Euler Equations</i>
12:00 - 13:00	Helena Nussenzveig Lopes (Brazil)	<i>On Helical Flows: Vanishing Viscosity Limit and Global Existence for Ideal Fluids</i>
13:00 - 14:30		Lunch in the Mathematics Institute Common Room