



MARY CARTWRIGHT MEETING

Friday 27 February 2009

Clore Lecture Theatre,
Department of Mathematics, Huxley Building, Imperial College London

(location map: www3.imperial.ac.uk/pls/portallive/docs/1/48903696.PDF)

3.30 Opening of the Meeting

Simon Donaldson, FRS (Imperial College London)

A spectator's commentary on symplectic topology

The talk will survey some of the developments of modern symplectic topology over the past 30 years, aimed at non-specialists. We will discuss the developments of pseudoholomorphic curve techniques, Floer homology, connections with geometric topology in 3 and 4 dimensions and the theory of complex algebraic surfaces.

4.30 Tea

5.00 Mary Cartwright Lecture

Dusa McDuff, FRS (Barnard College, Columbia University)

Symplectic embeddings of 4-dimensional ellipsoids

Gromov's celebrated nonsqueezing theorem of 1985 says that it is impossible to embed symplectically a large ball into a thin cylinder. One of the foundational results of modern symplectic topology, this led to a more or less complete solution of the 4-dimensional symplectic packing problem (which asks when a given disjoint union of balls can be symplectically embedded into another ball). However, there are many other packing problems. In this talk we discuss recent joint work with Schlenk about the constraints on embedding a symplectic ellipsoid into a ball. This leads to some intriguing elementary questions in number theory. The result has applications to constructing 6-dimensional manifolds with symplectic circle action.

The talk does not use much symplectic topology and will be accessible to graduate students and nonspecialists.

A dinner will be held after the meeting. Contact Isabelle Robinson (details below) for further information.

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting. Contact Isabelle Robinson (isabelle.robinson@lms.ac.uk) for further information.