Alvaro Pelayo (Washington University St. Louis)

Intermediate symplectic capacities

**Abstract**: In 1985 Misha Gromov proved his Nonsqueezing Theorem, and hence constructed the first symplectic 1-capacity. In 1989 Helmut Hofer asked whether symplectic d-capacities did exist if $1 < d < n$. I will discuss the answer to this question and its relevance in symplectic geometry. This is joint work with San Vu Ngoc.

3:30–4:00pm — Tea Break, 2nd floor lounge

Fraydoun Rezakhanlou (UC Berkeley)

Symplectic Diffusions and Navier-Stokes Equation

**Abstract**: Flows can be defined for diffusions with sufficiently regular coefficients. Using stochastic calculus one can decide whether or not a diffusion produces a symplectic flow. However, it is much easier for the flow of a diffusion to be weakly symplectic i.e. the associated symplectic form is invariant in some averaged sense. Iyer-Constantin Circulation Theorem is a stochastic analog of Kelvin’s principle for Navier-Stokes Equation. With the aid of symplectic diffusions, we produce a family of martigales associated with solutions to Navier-Stokes Equation that in turn can be used to prove Iyer-Constantin Circulation Theorem.

There will be a dinner at 6pm.

−D. Auroux, Y. Eliashberg, D. Fuchs, V. Ginzburg, M. Hutchings, E. Ionel, R. Montgomery, A. Weinstein