Topics in symplectic topology (M12)

Non-Examinable (Graduate Level)

Dr. Ailsa Keating

This course aims to give an introduction to some current research areas in symplectic topology. There will be a particular focus on Stein manifolds (i.e. complex submanifolds of $\mathbf{C}^n$). Topics are expected to include:

- Milnor fibres of isolated singularities
- constructions of Lagrangians submanifolds
- constructions of symplectic mapping class group elements
- a basic introduction to the Fukaya category

Prerequisites

The course will assume a good command of algebraic topology and differential geometry at the Part III level. Part III Symplectic Topology / Geometry is desirable, and some knowledge of algebraic geometry (at the Part II level) would be heplful.

There is some flexibility in the pace and level of exposition to be taken for the course, and interested students are encouraged to get in touch with the lecturer directly.

Literature

1. D. McDuff and D. Salamon, *Introduction to symplectic topology.* Oxford.
2. P. Seidel *Fukaya categories and Picard–Lefschetz theory.* EMS Publishing.
3. D. Auroux, *A beginner's introduction to Fukaya categories*, arXiv:1301.7056.