Symplectic Dynamics

Monday, September 19, 2011 (All day) - Wednesday, August 15, 2012 (All day)
2011-2012

The mathematical theory of dynamical systems provides tools to understand the complex behavior of many important physical systems. Of particular interest are Hamiltonian systems. Since Poincaré's fundamental contributions many mathematical tools have been developed to understand such systems. Surprisingly these developments led to the creation of two seemingly unrelated mathematical disciplines: the field of dynamical systems and the field of symplectic geometry. In view of the significant advances in both fields, it seems timely to have a program that aims at the development of the common core, which potentially should lead to a new field with highly integrated ideas from both disciplines. Of particular interest will be the study of the dynamics of area-preserving disk maps, the ramifications of new symplectic techniques in three-dimensional hydrodynamics, as well as questions about the utility of the symplectic pseudoholomorphic curve techniques in questions related to KAM and Aubry-Mather theory.

The program will be led by Helmut Hofer, Institute for Advanced Study, and John Mather, Princeton University. There will be weekly seminars and two workshops held during the weeks of October 10, 2011, and March 12, 2012.

terms:

- special year