

## *Hamiltonian Systems, Variational Methods and Symplectic Topology*

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Some questions in classical Hamiltonian dynamics (e.g., existence of global periodic phenomena or reduction of Hamiltonian systems with symmetries) are most easily formulated in the setting of symplectic geometry and have been among the driving forces behind the development of this field.

In my talk I will try to illustrate this through the famous Weinstein Conjecture on the existence of periodic orbits on energy hypersurfaces of contact type. The issues and techniques involved are very broad and deep, but I will focus on the variational principles underlying this problem and how they can be used to define symplectic invariants linking dynamics and topology.

In the end I will spend some time on a "variation" on the Weinstein Conjecture and sketch a result obtained together with Jan Bouwe van den Berg and Rob Vandervorst.