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Symplectic Geometry

Monday 15 July 2024 11:00 (45 minutes)

This course is an introduction to the foundations of symplectic geometry. We will discuss a motivating example—Hamiltonian mechanics—before defining what it means to be symplectic. Afterwards we will study some consequences of the general definitions. Importantly, we will show that locally, all symplectic spaces look the same: there are no local symplectic invariants! This is a consequence of Darboux's theorem.

Key words: Hamiltonian mechanics, symplectic manifolds, Darboux theorem

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