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Sommersemester 2008

Seminarankündigung

Symplectic Geometry

Symplectic geometry has its origins in classical mechanics, and today is an important and very active branch of geometry and topology. It is related to differential geometry, mathematical physics, global analysis, algebraic geometry, integrable systems and low-dimensional topology to mention just a few, although knowledge of these subjects (outside of some basic understanding of differential geometry) is not needed in order to take this seminar; they are mentioned in order to give some idea of areas to which this knowledge might be applicable. The basic object of study is a symplectic manifold, which is a smooth manifold with some additional structure. Symplectic geometry has no "local invariants"; in order to distinguish between two symplectic manifolds one needs some global information and this gives the subject a rather clean structure. The seminar will give an introduction to the basic techniques and examples; as well as being pretty in their own right these should provide students with tools useful for further study.

Some knowledge of differentiable manifolds will be assumed; if you do not have this please e-mail me **(carberry@maths.usyd.edu.au)** so that I can suggest appropriate reading.

Literatur: Lectures on Symplectic Geometry, by Ana Cannas da Silva