

Propuestas de TFG
Curso 2017-18
Mario García Fernández

1. Curvature in Geometry

Abstract: This project is intended to learn about metrics, connections, and geodesics on a differentiable manifold. It will cover the notion of curvature--via the construction of the Levi-Civita connection--as a way of measuring whether a Riemannian manifold is locally equivalent to the Euclidean space.

References:

J. M. Lee, Riemannian Manifolds: An Introduction to Curvature, Springer.

M. P. Do Carmo, Differential geometry of curves and surfaces, Prentice-Hall (1976).

2. Symplectic reduction

Abstract: This project is devoted to the study of quotients by Lie group actions on the category of symplectic manifolds. It will cover an introduction to symplectic geometry and the technique of Marsden-Weinstein reduction.

References:

D. McDuff and D. Salamon, Introduction to Symplectic Topology, Oxford University Press, New York, Second edition, 1998.