RUHR-UNIVERSITÄT BOCHUM

FAKULTÄT FÜR MATHEMATIK

RUB

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Oberseminar Dynamische Systeme

Magnetic Curvature and Existence of Closed Magnetic Geodesics

Dienstag, 08. November 2022
16:15 Uhr – Raum IA 1/53

Valerio Assenza
(Heidelberg)

Abstract:

A Magnetic System is the toy model for the motion of a charged particle moving on a Riemannian Manifold endowed with a magnetic field. Solutions for such systems are called Magnetic Geodesics and preserve the Kinetic Energy. One of the most relevant investigative interest in the theory is to understand the existence and in case the topological nature of Closed Magnetic Geodesic (periodic solution) in a given level of the energy. I will introduce the Magnetic Curvature, an object which encodes the geometrical properties coming from the Riemannian Curvature structure together with terms of perturbation due to the magnetic interaction. We will see how a positive curved Magnetic System carries a Contractible Closed Magnetic Geodesic for small energies.

Guests are very welcome!