
BERN-FRIBOURG GRADUATE SEMINAR

a seminar for Master and PhD students

Thursday 12th October, 2023: 17:15 - 18:00

Room B6, Exakte Wissenschaften, Bern

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SubRiemannian geodesics and magnetic fields

Abstract

One of the main problems in subRiemannian geometry is the study of the regularity of length-minimizing curves. The main issue is the presence of singular geodesics, length-minimizing curves for which we do not have a geodesic equation. In this talk we present a strategy to construct subRiemannian manifolds admitting singular geodesics. The key idea is to associate to every Riemannian manifold equipped with a magnetic field a particular subRiemannian manifold. We prove that if we choose properly the magnetic field then the subRiemannian manifold we produce admits singular geodesics.