

Week 2

Speaker: **Michael Entov**

Abstract: In this mini-course, I will discuss how a filtered version of the Legendrian contact homology (a major machinery and object of study in contact topology) can be used to obtain new information about contact Hamiltonian flows on contact manifolds. The applications concern conformal factors of contactomorphisms and trajectories of contact Hamiltonian flows connecting two disjoint Legendrian submanifolds or starting on one of them and asymptotic to the other. This is a joint work with L.Polterovich.

Speaker: **Leonid Polterovich**

Abstract: We discuss the occurrence of some notions and results from contact topology in the non-equilibrium thermodynamics. This includes the Reeb chords and the partial order on the space of Legendrian submanifolds.

Joint with M.Entov and L.Ryzhik.

Speaker: **Miguel Sánchez**

Abstract: Session 1: Lorentz–Finsler background

1. Minkowski and Lorentz norms
 2. Finsler, Lorentz–Finsler, and cone structures
 3. Basic Finslerian setting
 4. Symplectic and contact viewpoints for geodesics
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Speaker: **Eric Kilgore**

Abstract: We discuss some embedding rigidity results for Legendrian submanifolds of the pre-quantization of the standard symplectic vector space. In particular, we describe a criterion forbidding the squeezing (by Legendrian isotopy) of a Legendrian Λ into a sufficiently small neighborhood of the pre-image of a symplectic plane in the base, formulated in terms of certain categorical invariants associated to Λ . As an application, we'll see that lifts of certain (non-exact!) Lagrangians are not squeezable.

1. Speaker: **Miguel Sánchez**

Abstract: Session 2: Global Lorentz–Finsler Geometry and the space of cone geodesics

2. Causality theory for a cone structure
 3. Globally hyperbolic cone structures (with timelike boundary)
 4. The space of cone geodesics
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Abstract: Session 3: Applications

1. Broad picture of wave propagation
2. Links among Riemannian, Lorentzian and Finsler geometries
3. Fermat's principle, Snell's law and discretization
4. Finslerian Relativity