

Contact orderability and spectral selectors

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In 2000, Eliashberg and Polterovich introduced the notion of orderability to investigate the structure of the group of contact diffeomorphisms and the structure of isotopy classes of Legendrian submanifolds. Roughly speaking, a group of contact diffeomorphisms is orderable if the relation induced by the partial order on contact hamiltonian maps induces a partial order on the associated time-one flows. Throughout the years, orderability and non-orderability have been mainly studied using some sorts of spectral selectors based on Floer-like theories and generating functions. In this talk, we will explain why orderability is equivalent to the existence of spectral selectors and how these selectors can be used to derive multiple geometric properties in the orderable case: existence of Reeb chords between Legendrians, existence of time-function from the Lorentz-Finsler viewpoint, non-degeneracy of the interval topology, existence of geodesics for some natural metrics. This is a joint work in progress with Pierre-Alexandre Arlove.