

Abstract

A celebrated result due to Poincaré asserts that a closed minimizing geodesic on a orientable surface is linearly unstable when considered as orbit of the co-geodesic flow.

In this talk, starting from this classical theorem, we discuss some recently new results on the instability of closed (maybe not minimizing) geodesics of any causal character on higher dimensional (even not orientable) semi-Riemannian manifolds. Dropping the non-positivity assumption of the metric tensor is a quite challenging task since the Morse index is truly infinite.

This is a joint work with Xijun Hu and Ran Yang.