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**ALESSANDRO PORTALURI**, University of Turin

*Index and stability of closed semi-Riemannian geodesics*

A celebrated result of Poincaré asserts that a closed minimizing geodesic on a orientable (Riemannian) surface is unstable when considered as an orbit of the geodesic flow.

In this talk starting from this classical result, we'll discuss some recently results on the strong and linear instability of closed geodesics of any causal character on higher dimensional (maybe not oriented) Lorentzian and more general 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 X. Hu and R. Yang