The Maslov index via semi-Riemannian submersions

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Abstract

Given a horizontal geodesic $\gamma : I \to M$ in the total space of a semi-Riemannian submersion $\pi : M \to B$, we show that the contribution to the Maslov index of a focal instant respect to the fibre passing through the origin is equal to the contribution to the Maslov index of the projected geodesic $\pi \circ \gamma : I \to B$ in the base space. We use this result to calculate the Maslov index of a spacelike geodesic in a static space-time respect to the integral timelike curve passing through the origin.

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[1]The talk will be presented by the second author (Miguel Angel Javaloyes Victoria)