

Reduction of Unchanged Direction trajectories in Galilean Spacetimes

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Abstract

Erbacher's dimensional reduction on Riemannian isometric immersions is known to hold in the realm of semi-Riemannian geometry, but the hypotheses cannot be translated to the non-relativistic context of Galilean geometry. For a particular class of trajectories, it is a natural question to ask whether their dynamics can be reduced to a lower-dimensional spacetime. In this talk, we present a successful result in this direction, assuming the existence of an infinitesimal symmetry and a foliation in terms of spacelike leaves of constant sectional curvature.