

Euler–Arnold Dynamics on Metric Lie Groups

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Abstract.

In this talk, we discuss the Euler–Arnold dynamics associated with Lie groups equipped with left-invariant metrics. We explain how the Euler–Arnold equation reduces the geodesic completeness problem to the study of a quadratic vector field on the Lie algebra, and present some classification results for complete left-invariant metrics. We then study the topology of the complete locus in the moduli space of left-invariant Lorentzian metrics, showing that it is neither open nor closed. Finally, we discuss applications to left-invariant Kundt spacetimes. This talk is based on joint work with Ana Cristina Ferreira and Abdelghani Zeghib.