Submanifolds in the space of oriented geodesics in 3-dimensional real space forms

Nikos Georgiou
Waterford Institute of Technology, Ireland
ngeorgiou@wit.ie

Abstract

The space $\mathbb{L}(\mathbb{M}^3)$ of oriented geodesics in a 3-dimensional real space form $(\mathbb{M}^3, g)$ admits a canonical Kähler structure (G, J, Ω), where the metric G is of neutral signature, locally conformally flat and scalar flat. The structures J and Ω denote the canonical complex structure and the symplectic structure, respectively.
In this talk we first describe the Kähler structure (G, J, Ω) and then we present some basic results about the submanifold theory. Finally we give the geometric relation between the submanifold theory of $\mathbb{L}(\mathbb{M}^3)$ and the submanifold theory of $(\mathbb{M}^3, g)$.