

Aleksandra Borówka

Swann bundles, Armstrong cones and quaternionic Feix–Kaledin construction

B. Feix and D.Kaledin independently showed that there exists a hypercomplex structure on a neighbourhood of the zero section of the tangent bundle of a complex manifold with a real analytic connection with curvature of type $(1, 1)$. With D. Calderbank, we generalized this construction by allowing a twist by a line bundle with a connection and placing it in the framework of projective geometry: we showed that a neighbourhood of the zero section of any twisted tangent bundle of a c-projective manifold admits a quaternionic structure. Moreover, we completely characterize quaternionic manifolds that can be obtained in this way.

In this talk we will outline this construction and discuss its relations to twisted Armstrong cones and Swann bundles.