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On cohomogeneity-one Hermitian non-Kähler metrics

Abstract In this talk, we will consider Hermitian manifolds acted by a (real) compact Lie group by holomorphic isometries with principal orbit of codimension one. In particular, we will focus on a special class of these manifolds constructed by following Bérard-Bergery, which includes, among the others, the holomorphic line bundles over the complex projective spaces, the linear Hopf manifolds and the Hirzebruch surfaces. On such spaces, we characterize the invariant special Hermitian non-Kähler metrics, such as balanced, pluriclosed, locally conformally Kähler, Vaisman. Furthermore, we construct new examples of cohomogeneity one Hermitian metrics solving the second-Chern-Einstein equation and the constant Chern-scalar curvature equation. This is a joint work with Daniele Angella.