

The Bochner-flat geometry of weighted projective spaces

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Abstract

The existence of Bochner-flat smooth Kähler metrics on weighted projective spaces has been first stated by Robert Bryant in his seminal paper *Bochner-Kähler metrics*. In the same paper, Bryant constructed a family of complete Bochner-flat deformations of the standard flat Kähler space and showed that any complete, simply-connected, non locally symmetric Bochner-flat Kähler manifold is isomorphic to one of them. In this talk, which relies on a joint work with Liana David, we give a direct, simple construction of these metrics, based on a former observation by Sid Webster, and, by using a cone-like construction which generalizes the usual cone construction for the Fubini-Study metric, we show that any Bochner-flat weighted projective space can be realized as a S^1 -Kähler reduction of a Bryant complete Bochner-flat manifold.