

Bochner, conformal and conharmonic flatness of complex (κ, μ) -spaces

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Abstract

In this talk which consists of the results of [1], I answer the questions of Bochner, conformal and conharmonic flatness of complex (κ, μ) -spaces when $\kappa < 1$ and prove that such kind of spaces cannot be Bochner flat, conformally flat or conharmonically flat. Moreover, I give some corollaries for $\kappa \leq 1$, taking into account the answers of these questions for $\kappa = 1$ (normal complex contact metric manifolds), by means of [2]. Thus, it can be deduced from [2] that the only complete and simply connected complex (κ, μ) -spaces which are Bochner flat are locally isometric to $CP^{2n+1}(4)$ with the Fubini-Study metric and $\kappa = 1$ and that there do not exist any conformally flat nor any conharmonically flat complex (κ, μ) -spaces.

References

- [1] Yıldırım, H.: *On the geometry of complex (κ, μ) -spaces*, Math. Nachr. **289** (17-18) (2016), 2312-2322.
- [2] Blair, D. E., Martin-Molina, V.: *Bochner and conformal flatness on normal complex contact metric manifolds*, Ann. Glob. Anal. Geom. **39** (2011), 249-258.