

NORMAL ANTI-INVARIANT SUBMANIFOLDS OF PARAQUATERNIONIC KÄHLER MANIFOLDS

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Abstract. We introduce normal anti-invariant submanifolds of paraquaternionic Kähler manifolds and study the geometric structures induced on them. We obtain necessary and sufficient conditions for the integrability of the distributions defined on a normal anti-invariant submanifold. Also, we present characterizations of local (global) anti-invariant products.

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References

- [1] A. Bejancu, *Geometry of CR-Submanifolds*, D. Reidel Publish. Comp., Dordrecht, 1986. [MR0861408\(87k:53126\)](#). [Zbl 0605.53001](#).
- [2] A. Bejancu and H.R. Farran, *Foliations and Geometric Structures*, Springer, Berlin, 2006. [MR2190039\(2006j:53034\)](#). [Zbl 1092.53021](#).
- [3] B.Y. Chen, *Geometry of Submanifolds*, Marcel Dekker, New York, 1973. [MR0353212\(50 #5697\)](#). [Zbl 0262.53036](#).
- [4] E. Garcia-Rio, Y. Matsushita and R. Vazquez-Lorenzo, *Paraquaternionic Kähler Manifolds*, Rocky Mountain J. Math., **31** (2001), 237-260. [MR1821379\(2001k:53088\)](#). [Zbl 0987.53020](#).
- [5] B.L. Reinhart, *Foliated manifolds with bundle-like metrics*, Annals Math., **69** (2) (1959), 119–132. [MR0107279\(21 #6004\)](#). [Zbl 0122.16604](#).
- [6] B.L. Reinhart, *Differential Geometry of Foliations*, Springer-Verlag, Berlin, 1983. [MR0705126\(85i:53038\)](#). [Zbl 0506.53018](#).

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- [7] Ph. Tondeur, *Geometry of Foliations*, Monographs in Mathematics. **90** Basel: Birkhäuser, Basel, 1997. [MR1456994\(98d:53037\)](#). [Zbl 0905.53002](#).
- [8] H. Wu, *On the de Rham Decomposition Theorem*, Illinois J. Math., **8** (1964), 291-311. [MR0161280\(28 #4488\)](#). [Zbl 0122.40005](#).

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