Geometry of 3-(α, δ)-Sasaki manifolds and submersions over quaternionic Kähler spaces

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We give a gentle introduction to the new class of 3-(α, δ)-Sasaki manifolds, which are a natural generalisation of 3-Sasaki manifolds. We prove that any such manifold admits a locally defined Riemannian submersion over a quaternionic Kähler manifold. In the non-degenerate case ($\delta \neq 0$) we describe all homogeneous 3-(α, δ)-Sasaki manifolds fibering over symmetric Wolf spaces and their noncompact dual symmetric spaces. In the compact base case, this yields a complete classification of homogeneous 3-(α, δ)-Sasaki manifolds, while for non-compact bases, we provide a general construction of homogeneous 3-(α, δ)-Sasaki manifolds fibering over nonsymmetric Alekseevsky spaces, the lowest possible dimension of such a manifold being 19.

References:

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2. Ilka Agricola, Giulia Dileo, Leander Stecker, *Homogeneous non-degenerate 3-(α, δ)-Sasaki manifolds and submersions over quaternionic Kähler spaces*, to appear in Ann. Global Anal. Geom.