

A NEW FAMILY OF EINSTEIN MANIFOLDS
BASED ON NONASSOCIATIVE STRUCTURES

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For each central simple symplectic triple system over the real numbers, the standard enveloping Lie algebra and the algebra of inner derivations of the triple provide a reductive pair related to a semi-Riemannian homogeneous manifold. This manifold turns out to be an Einstein manifold [1].

Our construction is inspired in 3-Sasakian Geometry. The geometry of any 3-Sasakian homogeneous manifold is very well codified in Lie theoretical terms, appearing complex symplectic triple systems when describing the horizontal part of the tangent space. So, our new family can be seen as a *split* version of the 3-Sasakian homogeneous manifolds, a kind of split-quaternionic geometry.

Recent results with Alberto Elduque lead to the classification of the simple real symplectic triple systems and hence to a precise description of the related reductive pairs.

REFERENCES:

1. Draper C., *A new family of homogeneous Einstein manifolds based on symplectic triple systems*. To appear in Communications in Mathematics 2019.