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On the manifold of tripotents in JB^*-triples. (English)

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Summary: The manifold of tripotents in an arbitrary JB^*-triple Z is considered, a natural affine connection is defined on it in terms of the Peirce projections of Z, and a precise description of its geodesics is given. Regarding this manifold as a fiber space by Neher's equivalence, the base space is a symmetric Kähler manifold when Z is a classical Cartan factor, and necessary and sufficient conditions are established for connected components of the manifold to admit a Riemann structure.

Keywords : JB^*-triples; Cartan factors; Grassmann manifolds; Banach-Lie algebras and groups; Riemann manifolds
Classification :
∗46L70 Nonassociative selfadjoint operator algebras
58B20 Geometric structures on infinite-dimensional manifolds