Isidro, José M.; Stachó, László L.
On the manifold of tripotents in $JB^*$-triples. (English)
http://dx.doi.org/10.1016/j.jmaa.2004.09.009

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