A REAL HYPERSURFACE IN COMPLEX TWO-PLANE GRASSMANNIANS WITH RECURRENT $(1,1)$-TYPE TENSOR

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Abstract. Kobayashi and Nomizu [Foundations of Differential Geometry, Vol. I] have introduced a notion of recurrent for (r,s) type tensor on Riemannian manifolds. By the definition, we see that the conception of recurrent naturally becomes a kind of generalized parallelism. Specifically, we consider this notion for (1,1) type tensor defined on a real hypersurface in complex two-plane Grassmannians. Among several (1,1) type tensors, let us consider a structure Jacobi operator given on the Riemannian curvature tensor in this talk. Actually, Jeong, Perez and Suh [Acta Math. Hungar. (2009)] verified that there does not exist any connected Hopf hypersurface in complex two-plane Grassmannians with parallel structure Jacobi operator. We consider more general notions, which are said to be Reeb or $\mathcal{Q}^{\perp}$-recurrent structure Jacobi operator. By using these two weaker conditions, we give some characterizations of Hopf hypersurfaces in complex two-plane Grassmannians.

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