Some characterizations of 2-inner product

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The characterization of 2-inner product is an issue which is in focus of interest of many mathematicians. In this paper, several equivalent characterizations of 2-inner product, that are consequences of Theorem 2 ([1]) are discussed. Thus, the equivalence of generalizations of the Jordan and von Neumann ([2]) and also Frechet ([3]) classical results, are proven. Furthermore, the characterization of Hlawka, the characterization of D. S. Marinescu, M. Monea, M. Opincariu and M. Stroe ([4]) are proven as well.

References

- R. Malčeski, K. Anevska, *Characterization of 2-inner product by strictly convex 2-norm of modul c*, International Journal of Mathematical Analysis, Vol. 8, no. 33 (2014), 1647–1652.
- [2] M. Fréchet, Sur la definition axiomatique dune classe despaces vectoriels distanciés applicable vectorillement sur lespace de Hilbert, Ann. of Math. Vol. 36 (3) (1935), 705–718.
- [3] P. Jordan, J. von Neumann, *On inner products in linear, metric spaces*, Ann. of Math. Vol. 36 (3) (1935), 719–723.
- [4] D. S. Marinescu, M. Monea, M. Opimcariu, M. Stroe, Some Equivalent Characterizations of Inner Product Spaces and Their Consequences, Filomat 29 (7) (2015), 1587–1599.