A Classification of Isotropic Affine Hyperspheres

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ABSTRACT

In this work we study affine hypersurfaces $M$ which have isotropic difference tensor. Note that any surface always has isotropic difference tensor. In case that the metric is positive definite, such hypersurfaces have been previously studied in [1] and [2]. We first show that the dimension of an isotropic affine hypersurface is either 5, 8, 14 or 26. Next we assume that $M$ is an affine hypersphere and we obtain for each of the possible dimensions a complete classification.

References
