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Title: On skew-symmetric recurrent tensor fields of second order in 4-dimensional manifolds with neutral metric signature

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In this article, skew-symmetric tensor fields of second order, affectionately known as bivectors, are studied on 4-dimensional manifolds equipped with a metric tensor g of neutral signature $(+, +, -, -)$. Recurrence properties of such bivectors are examined by means of classifying these tensor fields algebraically, which is known for each metric signature in 4-dimensions and is much more complicated in the case of neutral signature. Some convenient canonical forms for such bivectors according to their Jordan–Segre type will be useful here. A complete solution to find all possible parallel and recurrent bivectors together with their allowed holonomy algebras are investigated with the help of the fix group of the considered bivector under tetrad transformations.

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