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Orthosymmetric bilinear map on Riesz spaces

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Abstract: Let E be a Riesz space, F a Hausdorff topological vector space (t.v.s.). We prove, under a certain separation condition, that any orthosymmetric bilinear map $T : E \times E \to F$ is automatically symmetric. This generalizes in certain way an earlier result by F. Ben Amor [*On orthosymmetric bilinear maps*, Positivity **14** (2010), 123–134]. As an application, we show that under a certain separation condition, any orthogonally additive homogeneous polynomial $P : E \to F$ is linearly represented. This fits in the type of results by Y. Benyamini, S. Lassalle and J.L.G. Llavona [*Homogeneous orthogonally additive polynomials on Banach lattices*, Bulletin of the London Mathematical Society **38** (2006), no. 3 123–134].

Keywords: orthosymmetric multilinear map; homogeneous polynomial; Riesz space
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