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Totally geodesic submanifolds in exceptional symmetric spaces

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Abstract: Joint work with Alberto Rodríguez-Vázquez. We classify maximal totally geodesic subspaces in exceptional Riemannian symmetric spaces up to isometry. Since the maximal subspaces containing flat factors have been classified by Berndt and Olmos, it suffices to find the semisimple ones. We show that these correspond to subalgebras in the Lie algebra of the isometry group which are maximal among the semi-simple subalgebras without compact ideals. To find all such subalgebras of simple real Lie algebras, we use earlier classification results by Dynkin, de Graaf-Marrani and Komrakov.

