Isoparametric submanifolds and Chevalley restriction theorem

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Abstract

The talk will be based on a recent joint work with E. Heintze and C. Olmos. We first introduce a notion of isoparametric submanifolds in arbitrary Riemannian manifolds, which generalizes Cartan's definition of isoparametric hypersurfaces in space forms and includes Terng's isoparametric submanifolds in Euclidean spaces and Terng-Thorbergsson's equifocal submanifolds in compact symmetric spaces as special cases. We then give a restriction theorem of Chevalley type for isoparametric submanifolds with flat sections in normal homogeneous spaces. This implies that all such submanifolds are analytic.