The Paley–Wiener Theorem for Direct Limits of Compact Symmetric Spaces
[joint work with Gestur Olafsson]

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Direct limits of symmetric spaces retain a number of properties of their finite dimensional counterparts. I'll discuss the Paley–Wiener Theorem for certain direct limits of riemannian symmetric spaces. The main tools are an analysis of polynomial invariants in the associated Lie structures and a study of injectivity radii. Here recall that polynomial invariants are fundamental objects in analysis on Lie groups and symmetric spaces because of the way they correspond to invariant differential operators. This results in a simple surjectivity criterion, which has application to problems in Fourier analysis on projective/injective limits. In particular it leads to theorems of Paley–Wiener type.