An element of a Lie group is called elliptic if it is contained in a compact subgroup. When $G$ is a reductive Lie group, Harish-Chandra showed that $L^2(G)$ has a discrete spectrum if, and only if $G$ contains an open subset of elliptic elements.

Let $X$ be a homogeneous space for a real, reductive algebraic group $G$. In this talk, we explore the relationship between regular elliptic cotangent vectors in $T^*X$ and regular elliptic discrete spectra in $L^2(X)$.

This talk is related to a joint paper with Gestur Olafsson and Hongyu He and a joint paper with Tobias Weich. (Received September 19, 2015)