

December 6: Fulton Gonzalez (Tufts), *Surjectivity of Mean Value Operators on Noncompact Symmetric Spaces*.

Let $X = G/K$ be a symmetric space of non-compact type. For $f \in \mathcal{E}(X)$ and a fixed point $y \in X$, the mean value $M^y f$ is the function on X given by

$$M^y f(gK) = \int_K f(gk \cdot y) dk \quad g \in G.$$

We show that the mean value operator $f \mapsto M^y f$ is surjective on $\mathcal{E}(X)$ if X is either complex or of rank one. For general higher rank symmetric spaces X we show that M^y is surjective if y is K -conjugate to a point in an appropriate Weyl subchamber. For a fixed K -invariant distribution $\mu \in \mathcal{E}'(X)$ we also show that Ehrenpreis' slow decrease condition on its spherical Fourier transform is a sufficient condition for convolution with μ to be surjective on $\mathcal{E}(X)$.