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Benjamin Harris* (blharris@math.mit.edu). *Fourier Transforms of Nilpotent, Coadjoint Orbits for $GL(n, \mathbb{R})$.*

In the 80s, Barbasch and Vogan proved that the first order approximation to an irreducible character of a reductive Lie group is a sum of Fourier transforms of invariant measures on nilpotent, coadjoint orbits for the group. In the 90s, Schmid and Vilonen showed that the coefficients in the sum are non-negative integers if the invariant measures are chosen to be the canonical measures on the coadjoint orbits, and they related this integral sum of orbits to the associated cycle and characteristic cycle, invariants of irreducible representations coming from algebraic geometry. In this talk, I will write down explicit formulas for the Fourier transforms of (the canonical measures on) coadjoint, nilpotent orbits for $GL(n, \mathbb{R})$. (Received March 23, 2010)