1037-43-299 **Brad Currey*** (curreybn@slu.edu), Department of Mathematics and Comp. Science, Saint Louis University, St. Louis, MO. *Construction of Frames on Nilpotent Domains.* Preliminary report.

Let $\psi \in L^2(N)$ where N is a connected, simply connected nilpotent Lie group, and consider the system $W(\psi)$ of dilations and translations of ψ:

$$W(\psi) = \{\delta(j)^{1/2}\psi(k^{-1}(j \cdot x)) : j \in D, k \in Z\}.$$

Here D is a discrete abelian subgroup of diagonalizable automorphisms of N with modulus δ, and Z is a lattice in N. We describe a method by which an explicit form of the non-commutative Fourier transform on N might be used to construct ψ so that $W(\psi)$ is a frame for $L^2(N)$. We describe examples where we have proved that this method works, and in at least some cases produces a Parseval frame. (Received February 05, 2008)