STUDY ON SOME TWO-STEP NILPOTENT LIE GROUPS

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Abstract

In this talk, I will present my PhD work; the aim is to study the L^p-boundedness of operators on two classes of two-step nilpotent Lie groups, using as tools Plancherel formulas and spherical functions.

The first class of groups consists of the groups of Heisenberg type, and the second class, of the two-step free nilpotent Lie groups (denoted by $N_{v,2}$ for v generators). In the latter case, we develop a radial Fourier calculus. Our study has focused on the maximal functions associated with Korányi spheres, together with their square functions, and the convolution operator defined with the radial Fourier calculus on $N_{v,2}$ (radial Fourier multipliers problem).