<u>Título</u>: "Spherical transforms and spectral analysis of differential operators"

<u>Resumen</u>: I will introduce two different topics fitting inside in the title.
Given a connected Lie group G of polynomial volume growth and a self-adjoint sublaplacian on it, it is possible to introduce a sort of Plancherel measure on the nonnegative half-line which allows to define a spherical-like transform associated with the operator. I will present results obtained by my student Leonardo Tolomeo in his undergraduate thesis.
The second topic is an insight into the spherical transform of a given K-type on a nilpotent Gelfand pair (N,K). The results are joint work with Amit Samanta.