

# HARMONIC AND SPECTRAL ANALYSIS

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## Hardy-Littlewood inequality and $L^p$ - $L^q$ Fourier multipliers on compact hypergroups

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(joint work with MICHAEL RUZHANSKY)

In this talk, we will discuss the inequalities devoted to the comparison between the norm of a function on a compact hypergroup and the norm of its Fourier coefficients. We prove the classical Paley inequality in the setting of compact hypergroups which further gives the Hardy-Littlewood and Hausdorff-Young-Paley inequalities in the noncommutative context. We establish Hörmander's  $L^p$ - $L^q$  Fourier multiplier theorem on compact hypergroups for  $1 < p \leq 2 \leq q < \infty$  as an application of Hausdorff-Young-Paley inequality.