

Harmonic Analysis on Locally Compact Abelian Groups

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Analysis on locally compact abelian groups and local fields has applications in a variety of different fields. Traditional Fourier analysis is based on the characters of \mathbb{R}^n , \mathbb{T}^n , and \mathbb{Z}^n . There is a growing body of literature using functions on p -adic groups to model quantum phenomena, and p -adic wavelets diagonalize certain important pseudo-differential operators. Fourier analysis on local fields comes up class field theory and in the study of particular zeta functions. This talk will present known results in the field and future directions of research.