Speaker: Fred Stoll (USC)

Title: Littlewood-Paley Theory for Subharmonic Functions on Domains in $\mathbb{R}^N$

Abstract: In the talk we will consider analogues of the classical Littlewood-Paley G-function and square function (or square area integral) S for subharmonic functions on the unit ball of $\mathbb{R}^N$. These functions were introduced by J. E. Littlewood and R. E. A. C. Paley in 1936 for analytic functions in the unit disc in their study of Fourier series. These functions have also been studied by Elias Stein for harmonic functions in the upper half-space of $\mathbb{R}^N$. We consider analogues of some of the well known classical inequalities between these functions, including L^p inequalities between S and the subharmonic function f. The development, with necessary modifications, is as in the text Trigonometric Series by A. Zygmund for analytic functions. Although our setting will be the unit ball of $\mathbb{R}^N$, the results can be extended to bounded domains with C^2 or $C^{1,1}$ boundaries.