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Unique continuation and the singular set of harmonic functions

Unique continuation property is a fundamental property for harmonic functions, as well as a large class of elliptic and parabolic PDEs. It says that if a harmonic function vanishes at a point to infinite order, it must vanish everywhere. In the same spirit, we are interested in quantitative unique continuation problems, where we use the local growth rate of a harmonic function to deduce some global estimates, such as estimating the size of its singular or critical set set. In this talk, I will talk about some recent results together with C. Kenig on boundary unique continuation.