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Local Convergence of Integer Valued Lipschitz Functions on Trees

The study of uniformly sampled integer valued Lipschitz functions of trees and related height function models has been of great recent interest. In particular, the phenomenon of localization, that is tightness of the law at the root has been established. In this talk, I will discuss joint work with Nathaniel Butler, Gourab Ray and Yinon Spinka that examines the local convergence of uniformly sampled 1-Lipschitz functions on $d-$ary trees which take the value zero on the leaves. In particular, as the number of generations goes to infinity, we show that local convergence holds if and only if $d < 8$. We also show that if the boundary values are allowed to be in $\{0, 1\}$, then local convergence always holds via an FKG argument.