1116-81-1028 **Boris Hanin*** (bhanin@mit.edu), **Steve Zelditch** and **Peng Zhou**. *Nodal Sets of Random Eigenfunctions of the Harmonic Oscillator.*

Random eigenfunctions at energy E of the isotropic harmonic oscillator in R^d have an $U(d)$ symmetry and are in some ways analogous to random spherical harmonics of fixed degree on S^d, whose nodal sets have been the subject of many recent studies. However, there is a fundamentally new aspect to this ensemble, namely the existence of allowed and forbidden regions. In the allowed region, the Hermite functions behave like spherical harmonics, while in the forbidden region, Hermite functions are exponentially decaying and it is unclear to what extent they oscillate and have zeros. The purpose of this talk is to present several results about the expected volume of the zero set of a random Hermite function in both the allowed and forbidden regions. This is joint work with Steve Zelditch and Peng Zhou. (Received September 16, 2015)