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Fan Yang, Horng-Tzer Yau and Jun Yin* (jyin@math.ucla.edu), Department of Mathematics, 6172 Math Science Hall, UCLA, los angeles, CA 90095. *Universality and Delocalization of random band matrices.*

In this talk, we discuss some recent work related to a main conjecture on random matrix theory, i.e. phase-transition conjecture on random matrix theory. The prediction says that phase-transition occurs at the band width regime $W \sim N^{1/2}$. For high dimensional matrix, i.e. $x, y \in Z^d$, H_{xy} , there exists some similar stimulation results.

Based on the development of studying on resolvent, i.e., $G = (H - z)^{-1}$, we obtained some results on low and high dimension cases. In this talk, we will introduce these work and the main ideas and tools used in these work.

They are jointed work with H.T. Yau, Yang Fan, etc.

Best Jun (Received September 14, 2019)