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The Hong Kong University of Science and Technology

Department of Mathematics

Seminar on Pure Mathematics

Critical radius and supremum of random spherical harmonics

By

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Abstract

We first consider deterministic immersions of the d-dimensional sphere into high dimensional Euclidean spaces, where the immersion is via spherical harmonics of level n. The main result is the, a priori unexpected, fact that there is a uniform lower bound to the critical radius of the immersions as $n \to \infty$. This fact has immediate implications for random spherical harmonics with fixed L^2-norm. In particular, it leads to an exact and explicit formulae for the tail probability of their suprema by Weyl's tube formula, and also relates this to the expected Euler characteristic of their upper level sets. This is the joint work with R. Adler.

Date: ***Friday, 6 October 2017***

Time: ***2:00p.m. - 3:00p.m.***

Venue: ***Room 3472, Academic Building (near Lifts 25&26), HKUST***

All are welcome!