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Seminar

A restriction estimate in R^3 using brooms

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Abstract

If f is a function supported on a truncated paraboloid, what can we say about Ef , the Fourier transform of f ? Stein conjectured in the 1960s that for any $p > 3$, $\|Ef\|_{L^p(R^3)} \lesssim \|f\|_{L^\infty}$. We observe that if Ef is large, then Ef is concentrated on the thin neighborhood of many low degree algebraic surfaces and the wavepackets of Ef are organized into large brooms. We analyse this broom structure and make a little progress on Stein's conjecture for $p > 3 + 3/13 \approx 3.23$. In the proof, we combined polynomial partitioning techniques introduced by Guth and two ends argument introduced by Wolff and Tao.

Date: 11 July 2018 (Wednesday)
Time: 4:00pm – 5:00pm
Venue: Room 219, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

All are Welcome