A SHARP SQUARE FUNCTION ESTIMATE FOR THE MOMENT CURVE IN $\mathbb{R}^3$

DOMINIQUE MALDAGUE

We will present recent work which proves a sharp L^7 square function estimate for the moment curve in $\mathbb{R}^3$. Consider a function f with Fourier support in a small neighborhood of the moment curve. Partition the neighborhood into box-like subsets and form a square function in the Fourier projections of f onto these box-like regions. Bounding f in L^p by the square function in L^p is an important way to quantify the cancellation that f has from its specialized Fourier support. As Guth, Wang, and Zhang did for the cone in 3 dimensions, this is another example of using ideas and techniques from decoupling theory to prove a sharp square function estimate.