Thursday, December 16, 10:30-11:30

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Stability of sharp Fourier restriction to spheres

In dimension $d \in \{3, 4, 5, 6, 7\}$, we establish that the constant functions maximize the weighted $L2(S^{d-1}) – L4(R^d)$ Fourier extension estimate on the sphere, provided that the weight function is sufficiently regular and small, in a proper and effective sense. This extends the known result in the unweighted case. One of the main tools is an integration by parts identity, which generalizes the so-called “magic identity” of Foschi for the unweighted inequality with $d=3$ (that is, the classical Stein—Tomas estimate). Joint work with E.Carneiro and D.Oliveira e Silva.