A NEW PROOF OF DECOUPLING FOR THE PARABOLA

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I will introduce decoupling, which is a new area of harmonic analysis. The ℓ^2 decoupling conjecture was resolved by Bourgain and Demeter in 2014, which led to applications I will briefly discuss from number theory and PDE.

One difficulty of learning about decoupling is the fact that the proof involves analysis at many scales, and can involve sophisticated geometric inputs, like the multilinear Kakeya inequality. I will explain a new proof of decoupling in the simplest possible case. This is related to recent joint work with Larry Guth and Hong Wang, as well as forthcoming joint work with Yuqiu Fu and Larry Guth.