A survey on ℓ^2-decoupling

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Abstract

In the past few years, Bourgain, Demeter and Guth developed a very powerful machinery in harmonic analysis, now known as decoupling inequalities. These inequalities capture certain orthogonality, that is present due to the existence of curvature in the frequency support of a function. These made possible breakthroughs in many areas of mathematics, from PDE to analytic number theory. In this talk, we will attempt to give a brief survey of this rapidly growing area.