

1145-11-1084 **Zane Kun Li*** (zkli@math.ucla.edu). *An l^2 decoupling interpretation of efficient congruencing in 2D.*

There are two apriori different looking proofs of Vinogradov's mean value theorem. One is Wooley's number theoretic efficient congruencing approach and the other is Bourgain, Demeter, and Guth's harmonic analysis approach by proving an l^2 decoupling theorem for the moment curve. In two dimensions, we give a precise interpretation of efficient congruencing using decoupling. Quantitative estimates will also be given which yields an application to the sixth-order correlation of integer points on a circle recovering unconditionally a result of Bombieri and Bourgain. (Received September 18, 2018)