Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Seminar

Decoupling and efficient congruencing in two dimensions (Part I & II)

Mr. Zane Li
University of California, Los Angeles

Part I

Date: 13 December 2018 (Thursday)

Time: 4:30pm – 5:30pm

Venue: Room 222, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

Part II

Date: 17 December 2018 (Monday)

Time: 10:30am – 11:30am

Venue: Room 222, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

All are Welcome

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Abstract

Vinogradov's Mean Value Theorem was proven separately by Wooley's efficient congruencing method and Bourgain-Demeter-Guth's decoupling method. The former is a number theoretic method while the latter is a harmonic analysis method. While similarities between the methods have been observed no precise dictionary has been written. We will review the efficient congruencing argument for Vinogradov's Mean value Theorem in two dimensions and then rewrite this argument in a language more similar to that of Bourgain-Demeter's proof of decoupling for the parabola. We will point out where tools from decoupling like ball inflation and $\ell^2 L^2$ decoupling make an appearance in this efficient congruencing inspired argument.

All are Welcome