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Generalised Fourier coefficients of multiplicative functions

Monday, June 23, 2014 11:30 AM (1 hour)

The aim of this talk is to explain a strategy that allows us to bound the Fourier coefficients of a large class of not necessarily bounded multiplicative functions. The interest in this result lies in the fact that the strategy can be adapted to show that these multiplicative functions give rise to functions that are orthogonal to linear nilsequences when applying a ‘W-trick’. This, in turn, provides one of two necessary steps for an application of the Green–Tao methods, which can be employed to asymptotically evaluate linear correlations of these multiplicative functions. Such correlations appear naturally in many arithmetic problems.

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