

Number Theory & Dynamical Systems Seminar

Wednesday, September 5th, 2017

11:00 am - noon in Hume 321

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Nilsequences and multiple correlations along primes with application to Chowla conjecture

ABSTRACT

The results of Bergelson-Host-Kra and Leibman state that a multiple correlation can be decomposed into sum of a nilsequence (a sequence defined by evaluating a continuous function along an orbit in a nilsystem) and a null sequence (a sequence that tends to zero in density). I refine their results by showing the null sequence tends to zero in density along primes. In this talk, I sketch the proof whose main ingredient is Green-Tao's theorem on orthogonality between W-tricked von Mangoldt function and nilsequences. I also briefly explain how Tao and Teravainen use above refinement to prove odd cases of logarithmic Chowla conjecture.