Decoupling, Cantor sets, and additive combinatorics

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Decoupling and discrete restriction inequalities have been very fruitful in recent years to solve problems in additive combinatorics and analytic number theory. In this talk I will present some work in decoupling for Cantor sets, including Cantor sets on a parabola, decoupling for product sets, and give applications of these results to additive combinatorics. Time permitting, I will present some open problems.

Contains joint work with Alan Chang (Princeton), Rachel Greenfeld (UCLA), Asgar Jamneshan (Koç University), Zane Li (IU Bloomington), José Ramón Madrid Padilla (UCLA).