

Title: Motivic homotopy types with modulus over a general base

Abstract: I will talk about joint work with Hiroyasu Miyazaki. Based on the Kahn-Miyazaki-Saito-Yamazaki category, we develop a very general category of modulus pairs which notably admits categorical fibre products. All the usual motivic topologies (Zar, Nis, et, fppf, qfh, etc) have well-behaved generalisations, and their fibre functors can be described using the semi-valuation rings that appear in Temkin's Relative Riemann-Zariski spaces. Together with the modulus cube as replacement for the affine line, this provides a framework where relative motives with modulus and relative motivic homotopy types with modulus can be studied.