

Speaker: Emmanuel Kowalski

Title: Do pseudo-polynomials dream of Galois theory?

Abstract: Pseudo-polynomials are functions mapping integers to integers such that the reduction modulo a prime is also well-defined. There exist uncountably many of them, with exponential growth, in addition to actual polynomials, and there are many simple concrete examples. Numerical experiments with some of them suggest that these behave like polynomials in certain respects, related to the Chebotarev density theorem and exponential sums over finite fields. The talk will present some of these phenomena, and some very speculative suggestions concerning their origin, involving Deligne-type categories. In passing, we will make a detour through the 18th century “*Problème des rencontres*” in probability theory.