Lodha Mathematical Sciences Institute

Lodha Supremus, 16th Floor, Mumbai

Seminar Announcement

21 January 2026

Seminar I: *Homogeneous spaces over an abelian variety*

Margot Bruneaux
Institut Camille Jordan, Université Claude Bernard Lyon 1
Simion Stoilow Institute of Mathematics of the Romanian Academy
Time: 14:00–15:00

Abstract.
In this paper, we study a question of Colliot-Thélène and Iyer concerning the existence of rational sections in families of homogeneous spaces over an abelian variety, after base change by a suitable étale isogeny of the abelian variety. Assuming characteristic zero and that the homogeneous spaces arise from connected reductive groups, the problem is reformulated in terms of torsors under reductive groups over an abelian variety A.

Building on work of Moonen and Polishchuk, we construct a filtration on the motive of a Jacobian variety to analyze the action of isogenies on unramified cohomology and Witt groups. This approach allows for a positive response to the question for reductive groups whose root data do not contain a factor of type E_8 when $\dim A > 2$ and $\mathrm{cd}(k) \leqslant 1$, and for all reductive groups when $\dim A = 2$ and k is algebraically closed.

Seminar II: *Failure of Nisnevich descent for 0-cycles with modulus*

Rahul Gupta
Institute of Mathematical Sciences, Chennai
Time: 15:10–16:10

Abstract.
In 1986, Kato–Saito developed geometric unramified class field theory using Chow groups as idèle class groups. To extend this theory to quasi-projective varieties over finite fields, Kerz–Saito introduced the Chow group of zero-cycles with modulus in 2013. Motivated by this and by the additive higher Chow groups of Bloch–Esnault (2003), Binda–Saito defined higher Chow groups with modulus in 2018.

It is well known that Bloch's higher Chow groups satisfy Nisnevich descent. Since the introduction of Chow groups with modulus, it has been an open question whether this descent property continues to hold in the presence of modulus conditions. In this talk, we show that Nisnevich descent fails for Chow groups with modulus, even for smooth projective surfaces over finite fields.

We shall begin the talk by recalling the notions of Chow groups with modulus and Nisnevich descent, and then outline the construction of a counterexample and its connection with ramified class field theory. The talk is based on joint work with Amalendu Krishna.