



Seminar

September 2024

2024.9.2 (Mon)

Algebra Seminar (15:30--17:00 [Venue: Mathematics Building 201])

Speaker : Roberto Gualdi (Universitat Politècnica de Catalunya)

Title : On the arithmetic Kähler package

Abstract :

The Kähler package, which includes the hard Lefschetz property and the Hodge--Riemann relations, plays a relevant role in several areas of mathematics, from differential and algebraic geometry to combinatorics.

In the context of Arakelov geometry, an arithmetic version of these properties can be formulated for hermitian metrized line bundles; strongly related to them, the arithmetic analogue of Grothendieck's standard conjectures has been proposed by Gillet and Soulé.

In this talk, based on a joint ongoing work with Paolo Dolce and Riccardo Pengo, we will show how the validity of the arithmetic Kähler package is linked to certain positivity conditions of the involved hermitian line bundle, and we will mention some implications of these observations in the case of projective spaces.

6-3, Aramaki Aza-Aoba, Aoba-ku, Sendai 980-8578, Graduate School of Science, Tohoku University, Japan

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