

早稲田大学整数論セミナーの予定 (ミニワークショップ)

日時：2025 年 11 月 26 日（水） 15:45～16:45

場所：〒169-8555 東京都新宿区大久保 3-4-1
早稲田大学西早稲田キャンパス
61 号館 4 階 405 室 (61 - 405)
対面と Zoom ミーティングによるハイブリッド開催

講演者：Ana Botero 氏（Bielefeld University）

タイトル：Infinite Chern-Weil theory and log b-divisors

アブストラクト：Given a smooth complex manifold, Chern-Weil theory asks for the Chern classes of holomorphic vector bundles to be represented by forms and currents in de Rham cohomology. If the vector bundle is endowed with a smooth (even mildly singular) metric, then Chern-Weil theory holds. There are however cases of rich arithmetic interest (e.g. families of abelian varieties) where canonical metrics are singular and Chern-Weil theory does not longer hold. The goal of this talk is to state an infinite version of Chern-Weil theory for line bundles endowed with semipositive singular metrics using intersection theory of log b-divisors. The latter can be thought of infinite towers of divisors indexed over log smooth modifications. We apply our results to the line bundle of Siegel-Jacobi forms over the universal abelian variety endowed with its canonical invariant metric and show that the algebra of Siegel-Jacobi forms of bounded relative index is not finitely generated. If time permits, we discuss the relation between (log) b-divisors and adelic divisors in the sense of Yuan and Zhang and mention some applications in arithmetic intersection theory. This is joint work with José Burgos, David Holmes and Robin de Jong.