

Boundedness and Moduli Problems in Birational Geometry and Foliation Theory



Contribution ID: 12

Type: **not specified**

Semiampleness of line bundles arising from Hodge theory

Wednesday, 29 October 2025 09:30 (1 hour)

Semiampleness criteria are subtle foundational statements in algebraic geometry. In this talk, we present a new semiampleness result for the Hodge bundle of certain Calabi–Yau variations of Hodge structure. This result is a key ingredient in the proof of two long-standing conjectures: Griffiths’ conjecture on functorial compactifications of images of period maps, and the b-semiampleness conjecture of Prokhorov and Shokurov. The proof crucially relies on o-minimal GAGA, marking the first use of o-minimality techniques in birational geometry.

This is the first of a series of two talks on the paper “Baily–Borel Compactifications of Period Images and the b-Semiampleness Conjecture”, a joint work with Benjamin Bakker, Stefano Filipazzi, and Jacob Tsimerman.

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