Leibniz Universität Hannover

Oberseminar
Institut für Algebraische Geometrie

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Metric aspects of the Ceresa cycle.

When C is a smooth projective connected complex curve of genus $g > 1$, the Ceresa cycle associated to C is the cycle $C - C^-$ in the jacobian J of C. The Ceresa cycle is homologically trivial and hence, by an Abel-Jacobi type construction due to Griffiths, it gives rise to a point in a higher intermediate jacobian associated to J. The Griffiths Abel-Jacobi construction varies well in families and gives rise to a "normal function" on the moduli space of curves M_g. This normal function in turn gives rise to an interesting smoothly metrized holomorphic line bundle on M_g, called the Hain-Reed line bundle. We study the degeneration behavior of this metrized line bundle near the boundary of M_g in the Deligne-Mumford compactification, and answer a question of Hain. Following Hain we discuss a relation with slope inequalities for families of curves. Joint work with Farbod Shokrieh.

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Alle Interessierten sind herzlich eingeladen.