



Leibniz
Universität
Hannover

Oberseminar für Arithmetische Geometrie und Zahlentheorie

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The Hirzebruch-Mumford volume of unitary groups and its application to the geometry of ball quotients.

Determination of the birational types of modular varieties is an important problem. In my talk, I calculate the Hirzebruch-Mumford volume of unitary groups and prove that, as a consequence, when the discriminant of imaginary quadratic fields or the rank of unitary groups is sufficiently large, the line bundle, whose sections are modular forms vanishing on branch divisors, is big on ball quotients. As an application, under this condition, I show that ball quotients are of general type, assuming that there exists a low-weight cusp form. As background, modular varieties, especially Siegel modular varieties, by Tai, Freitag and Mumford, and orthogonal modular varieties, by Gritsenko-Hulek-Sankaran and Ma, are known to be of general type when their dimension is large enough, and this result is their unitary analog.

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10:45 - 11:45, Raum A410

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Alle Interessierten sind herzlich eingeladen.