

Harvard-MIT Algebraic Geometry Seminar

Plurigenera of general type surfaces in mixed characteristic

Junecue Suh

MIT

In equal characteristic zero, the plurigenera of projective smooth varieties have been proven to be deformation-invariant by Iitaka, Kollár-Mori and Siu. W. Lang and Katsura-Ueno have shown, however, that the analogues in equal characteristic p or in mixed characteristic are false, with examples of Enriques and elliptic surfaces, respectively. We exhibit two classes of general type surfaces in mixed characteristic whose geometric genus may be made to jump by arbitrarily large amount in reduction modulo p , the first being finite quotients of complete intersections constructed in the method of Godeaux, Serre and Raynaud, and the second being certain quaternionic and unitary Shimura surfaces. In the latter case, one can say that one has more modular forms modulo p .

Tuesday November 27th
3:00 p.m.
MIT (2-142)