BOSTON UNIVERSITY GEOMETRY SEMINAR

VECTOR BUNDLES AND ORBIFOLD K-THEORY

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March 7, 2012, 3:00 – 4:00pm
Math/Computer Science, Room B21
111 Cummington Street, Boston

Tea: 2:45pm in Room 144

Abstract: If X is a smooth complex variety with a proper action of a complex algebraic group G, so that the quotient [X/G] is a complex orbifold, then one can consider its orbifold K-theory ring, a K-theoretic version of its Chen-Ruan cohomology. Orbifold K-theory contains, as a subring, the ordinary equivariant K-theory. An important class of elements in ordinary equivariant K-theory are positive elements, i.e. those which are represented by eqeuivariant vector bundles. It is natural to ask if there are elements in orbifold K-theory and its cousins which play an analogous role. We show that if G is, for example, a complex torus and [X/G] is strongly Gorenstein then it is possible to define a notion of positivity for these rings and their cousins. We calculate these elements for various weighted projective spaces and relate these results to the crepant resolution conjecture.

See `http://math.bu.edu/research/geom/seminar.html` or contact Takashi Kimura *kimura@math.bu.edu* for more information.