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Groups and line bundles associated to abelian varieties

A line bundle on an abelian variety is non-degenerate if its Euler characteristic is nonzero. By a theorem of Mumford, such a line bundle admits a single nonzero cohomology group. This cohomology group is the unique irreducible weight one representation of the theta-Heisenberg group of the line bundle.

This talk has three goals. The first is to discuss the nature of cup-product problems arising from pairs of non-degenerate line bundles with positive index; the second concerns the higher weight representation theory of non-degenerate theta groups; the third is to describe a relation amongst adelic theta groups arising from pairs of line bundles.