

# Harvard-M.I.T. Algebraic Geometry Seminar

## SHIMURA CURVES EMBEDDED IN IGUSA'S THREEFOLD

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### Abstract:

Let  $\mathcal{O}$  be a maximal order in a totally indefinite quaternion algebra over a totally real number field. We study the locus  $\mathcal{Q}_{\mathcal{O}}$  of quaternionic multiplication by  $\mathcal{O}$  in the moduli space  $\mathcal{A}_g$  of principally polarized abelian varieties of even dimension  $g$  with particular emphasis in the two-dimensional case. We describe  $\mathcal{Q}_{\mathcal{O}}$  as a union of Atkin-Lehner quotients of Shimura varieties and we compute the number of irreducible components of  $\mathcal{Q}_{\mathcal{O}}$  in terms of class numbers of CM-fields. Finally, we discuss several applications of our results to modularity questions and we provide explicit examples which illustrate the whole picture in dimension two.

Tuesday, December 10

3:00 p.m.

Harvard Rm 507

<http://www-math.mit.edu/~jstarr/02sem/>.