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*Supersingular Loci of Unitary Shimura Varieties*

Unitary Shimura varieties are moduli spaces of abelian varieties with an action of a quadratic imaginary field. The supersingular locus of a unitary Shimura variety parametrizes supersingular abelian varieties with such an action. In some cases, this supersingular locus has a very particular structure: each irreducible component is a Deligne-Lusztig variety, and the intersection combinatorics are controlled by a Bruhat-Tits building. We'll consider two examples like this, and then observe that this does not hold in general. (This talk concerns joint work with Naoki Imai.)