

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

# Constructing hyperelliptic curves of genus 3 whose Jacobians have CM

Christelle Vincent  
University of Vermont

Monday, October 30 at 4:15 pm  
111 Cummington Mall, MCS B21  
Tea and cookies in MCS 144 at 4:00 pm

**Abstract:** For cryptographic applications, it is convenient, given a CM field, to be able to construct an abelian variety with complex multiplication by an order in the ring of integers of that field.

It is currently well-understood how to do this in dimension 1, and a lot of progress has been done in dimension 2. We discuss here the challenges of constructing an abelian threefold with complex multiplication by the ring of integers of a sextic CM field and the work that is being done in this direction.