

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

# Real quadratic fields and holomorphic modular forms

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Monday, April 29 at 4:15 pm  
111 Cummington Mall, MCS B21  
Tea and cookies in MCS 144

**Abstract:** Let  $G$  be a congruence subgroup of  $GL(n, \mathbb{Z})$  and  $E$  a real quadratic field. A comparison of the Steinberg modules for  $GL(n, \mathbb{Q})$  and  $GL(n, E)$  yields an interesting map from irrational elements of  $E$  to cohomology classes of  $G$ . This map does not seem to be related to what one might have thought, namely period integrals over closed geodesics in the modular curve. Dan Yasaki and I have been exploring this map for  $n = 2$ , and it seems to lead to an invariant (which as far as we know is new) which depends on  $E$  and the level of  $G$ .