## A singular theta lift and the construction of Green currents for unitary groups

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## Abstract

Borcherds introduced a singular theta lift from  $SL_2$  to O(n, 2), which on one hand gave rise to remarkable product expansions of automorphic forms for O(n, 2), and on the other hand was used by Bruinier to construct Green functions for "special" divisors on the associated locally symmetric space. In previous work jointly with *Bruinier*, we established a duality statement between the Borcherds lift and a theta lift introduced by Kudla and Millson. From this result, we can also deduce a relationship between Bruinier's Green function and the one constructed by Kudla in the context of his joint program with Rapoport and Yang on generating series in arithmetic geometry. In this talk, we discuss these ideas and present results of work in progress on the extension to unitary groups.