

**Meeting:** 1004, Bowling Green, Kentucky, SS 9A, Special Session on L-Functions

1004-11-274            **Jonathan Hanke\*** ([jonhanke@math.duke.edu](mailto:jonhanke@math.duke.edu)), Mathematics Department, Duke University, Box 90320, Durham, NC 27708-0320. *The cuspidal structure of certain ternary theta functions.*

We will discuss how one can obtain information about the usually mysterious cuspidal part of some weight  $3/2$  theta functions of (positive definite) ternary quadratic forms, specifically those admitting a spinor exceptional square-class. By analyzing its weight 2 Shimura lift (which has the same L-function on this square-class), and considering its associated Galois representations, one obtains that this lift must be a sum or difference of Hecke eigenforms and the twists by certain quadratic characters. We will also discuss progress on a generalization of this result to totally real number fields. (Received January 27, 2005)