1023-22-307   **Roger Howe***, Department of Mathematics, Yale University, PO BOX 208283, New Haven, CT 06520. *An approach to the local theta correspondence through invariants?*

Let k be a local field, not of residual characteristic 2. Let $\tilde{Sp}_{2n}(k)$ be the metaplectic 2-fold cover of the symplectic group $Sp_{2n}(k)$ in $2n$ variables over k. Let ω denote the oscillator representation of $\tilde{Sp}_{2n}(k)$. This is a unitary representation resulting from the action of $Sp_{2n}(k)$ on the Heisenberg group. Let ω^∞ denote its canonical submodule of smooth vectors, and let $(\omega^\infty)^*$ be the dual module of "distribution-valued vectors". Let (G, g') be a reductive dual pair - each of G and G' is the full centralizer of the other in $\tilde{Sp}_{2n}(k)$. It is known that the irreducible $G \times G'$ subspaces of $(\omega^\infty)^*$ define a bijection between certain of the irreducible admissible representations of G and those of G' (the *local theta correspondence*).

Let $((\omega^\infty)^*)^{G,\chi}$ be the space of distributional vectors which transform under a one-dimensional character χ of G. This talk will sketch a natural description $((\omega^\infty)^*)^{G,\chi}$ as a G' representation. This leads to the question, whether this description can be parleyed into a proof of the full local theta correspondence. (Received September 05, 2006)