

**April 16, 2014:** David Vogan (MIT), *Twisting representations and Hecke modules*.

(This talk will be quite informal and low-level.)

Suppose  $G \subset G'$  is a subgroup of index 2. Then  $G'/G = \mathbb{Z}/2\mathbb{Z}$  acts on the set  $\widehat{G}$  of irreducible representations. (That's the "twisting" of the title.) The fixed points are the irreducible representations of  $G$  that extend to  $G'$ . Often one would like to understand the characters of these representations of  $G'$ . An algorithm for solving this problem in case  $G$  is a real reductive group appears in a recent paper of Lusztig and Vogan (*Quasisplit Hecke algebras and symmetric spaces*, Duke Math. J. **163**, no. 5, 983–1034). I'll talk in some detail about the interesting example  $SO(n, n) \subset O(n, n)$ , where my misunderstanding of signs has so far prevented a computer implementation of the solution.