

1023-22-654

David A. Vogan* (dav@math.mit.edu), 2-281, MIT, 77 Massachusetts Ave., Cambridge, MA 02139. *Counting intertwining operators for real reductive groups.*

One of Mackey's most beautiful theorems is concerned with counting the intertwining operators between two induced representations. In the setting of real reductive groups, his result implies that almost all principal series representations are irreducible, and it leads to bounds on the reducibility of all principal series representations.

These results suggest two questions. The first is whether the upper bounds be improved to precise descriptions of the reducibility. Such a precise description was provided by the work of Knapp and Stein; I will recall briefly what they did.

The second question is whether one can get similar results about other unitary representations. The first difficulty is that Mackey did not provide more tools than induction for constructing representations. Two more tools are needed. The first, cohomological induction, was created by Zuckerman. The second, a theory of unipotent representations, does not yet exist. I will discuss reducibility for these more general representations, and what parts of Mackey's original ideas can still be seen. (Received September 20, 2006)