CHARACTER FORMULA FOR DISCRETE SERIES

Hang Wang

University of Adelaide

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Weyl character formula describes characters of irreducible representations of compact Lie groups. This formula can be obtained using geometric method, for example, from the Atiyah-Bott fixed point theorem or the Atiyah-Segal-Singer index theorem. Harish-Chandra character formula, the noncompact analogue of the Weyl character formula, can also be studied from the point of view of index theory. We apply orbital integrals on K-theory of Harish-Chandra Schwartz algebra of a semisimple Lie group G, and then use geometric method to deduce Harish-Chandra character formulas for discrete series representations of G. This is work in progress with Peter Hochs.