

# Lie Group and Representation Theory Seminar

Date: September 2 (Fri), 2005, 13:30–14:30  
Place: RIMS Room 402  
Speaker: Alexander Alldridge (University of Paderborn)  
Title: The Embedding of Discrete Series Representations  
of Facial Subgroups

Abstract: Consider a Hermitian symmetric domain  $B$  with connected automorphism group  $G$ . The boundary of the convex domain  $B$  decomposes into lower-rank Hermitian symmetric spaces  $\bar{B}$  with connected automorphism groups  $\bar{G} \subset G$ . It is natural to ask for embeddings of discrete series representations (or more general irreducible unitary representations) of  $\bar{G}$  into corresponding representations of  $G$ . If  $B$  is an irreducible classical domain, we exhibit an explicit unitary embedding of all discrete series representations of  $\bar{G}$  (holomorphic or non-holomorphic), such that the highest weight vectors of the lowest  $K$ -types correspond. The construction uses Knapp-Wallach's Szegő operators, and can be extended to all representations in the support of the Plancherel measure of  $\bar{G}$ .

Date: September 2 (Fri), 2005, 15:00–16:00  
Place: RIMS Room 402  
Speaker: 河添健氏 Takeshi Kawazoe (Keio University)  
Title: On Hardy's theorem on  $SU(1,1)$

Abstract: The classical Hardy theorem asserts that  $f$  and its Fourier transform  $\hat{f}$  can not be very rapidly decreasing. This theorem was generalized on Lie groups by various people, and also for the Fourier-Jacobi transform. Especially, the heat kernel plays an essential role, which is a “good” function in the sense that  $f$  and a generalised Fourier transform both have good decay. However, on  $SU(1,1)$  there are infinitely many “good” functions. In this talk, we shall consider a characterization of “good” functions on  $SU(1,1)$ .