

Lie Groups and Representation Theory Seminar at the University of Tokyo

リー群論・表現論セミナー

- DATE September 26 (Tue), 2017, 17:00–18:30
- PLACE Room 056, Graduate School of Mathematical Sciences
- SPEAKER **Hideko Sekiguchi** (The University of Tokyo, Japan)
- TITLE Representations of Semisimple Lie Groups and Penrose Transform
- ABSTRACT The classical Penrose transform is generalized to an intertwining operator on Dolbeault cohomologies of complex homogeneous spaces X of (real) semisimple Lie groups. I plan to discuss a detailed analysis when X is an indefinite Grassmann manifold.
- To be more precise, we determine the image of the Penrose transform, from the Dolbeault cohomology group on the indefinite Grassmann manifold consisting of maximally positive k -planes in $\mathbb{C}^{p,q}$ ($1 \leq k \leq \min(p, q)$) to the space of holomorphic functions over the bounded symmetric domain.
- Furthermore, we prove that there is a duality between Dolbeault cohomology groups in two indefinite Grassmann manifolds, namely, that of positive k -planes and that of negative k -planes.
- (joint with topology seminar)