Lie Groups and Representation Theory Seminar
at the University of Tokyo

リー群論・表現論セミナー

**Speaker**  Benjamin Harris (Louisiana State University, USA)
**Date**  October 22 (Tue), 2013, 17:00–18:00
**Place**  Room 126, Graduate School of Mathematical Sciences
**Title**  Representation Theory and Microlocal Analysis

**Abstract**
Suppose $H \subset K$ are compact, connected Lie groups, and suppose $\tau$ is an irreducible, unitary representation of $H$. In 1979, Kashiwara and Vergne proved a simple asymptotic formula for the decomposition of $\text{Ind}^K_H \tau$ by microlocally studying the regularity of vectors in this representation, thought of as vector valued functions on $K$. In 1998, Kobayashi proved a powerful criterion for the discrete decomposability of an irreducible, unitary representation $\pi$ of a reductive Lie group $G$ when restricted to a reductive subgroup $H$. One of his key ideas was to restrict $\pi$ to a representation of a maximal compact subgroup $K \subset G$, view $\pi$ as a subrepresentation of $L^2(K)$, and then use ideas similar to those developed by Kashiwara and Vergne.

In a recent preprint the speaker wrote with Hongyu He and Gestur Olafsson, the authors consider the possibility of studying induction and restriction to a reductive Lie group $G$ by microlocally studying the regularity of the matrix coefficients of (possibly reducible) unitary representations of $G$, viewed as continuous functions on the (possibly noncompact) Lie group $G$. In this talk, we will outline the main results of this paper and give additional conjectures.