

Lie Groups and Representation Theory Seminar at the University of Tokyo

リー群論・表現論セミナー

(Joint with Tuesday Seminar on Topology)

DATE July 14 (Tue), 2025, 16:00–17:30

PLACE Room 056

SPEAKER **Yuichiro Tanaka (田中雄一郎)** (The University of Tokyo)

TITLE Visible actions of real reductive groups on complex algebraic varieties

ABSTRACT A unitary representation of a locally compact group is multiplicity-free if each irreducible representation appears at most once in its irreducible decomposition. To provide a unified perspective on this property in the context of Lie group representations, T. Kobayashi introduced the theory of visible action for holomorphic actions of Lie groups on complex manifolds. This approach enables us to understand many known examples uniformly and also leads to the discovery of new ones by utilizing Kobayashi's propagation theorem of multiplicity-freeness property for visible actions. In this talk, we will begin with the definition of visible action, illustrated with examples, and then explore some known results on classifications of visible actions and relationships among the coisotropy, the sphericity and the visibility for group-actions on complex smooth algebraic varieties. We will also discuss recent results based on unitary tricks for transferring properties of compact group-actions on complex flag manifolds to non-compact ones.