Lie Groups and Representation Theory Seminar at the University of Tokyo

リー群論・表現論セミナー

DATE   July 20 (Tue), 2021, 17:00–18:00

PLACE   Online

SPEAKER   **Hiroyoshi Tamori (田森宥好)** (Hokkaido University)

TITLE   零でない線形周期の存在の必要条件
On the existence of a nonzero linear period

ABSTRACT (G, H) を対称対 $(\mathrm{GL}(n, \mathbb{H}), \mathrm{GL}(n, \mathbb{C})), (\mathrm{GL}(2n, \mathbb{R}), \mathrm{GL}(n, \mathbb{C}))$ とする．この時，G の滑らかで緩増加な既約認容 Fréchet 表現 π の H-線形周期の空間の次元は 1 以下であることが Broussous-Matringe により知られている．G の旗多様体の各 H-軌道が主系列表現のホモロジーに与える影響を考えることで，π の零でない H-線形周期が存在する必要条件を紹介する．これはアルキメデス局所体の場合の Prasad と Takloo-Bighash の予想を与える．鈴木美裕氏（金沢大学）との共同研究に基づく．

Let (G, H) be a symmetric pair $(\mathrm{GL}(n, \mathbb{H}), \mathrm{GL}(n, \mathbb{C}))$ or $(\mathrm{GL}(2n, \mathbb{R}), \mathrm{GL}(n, \mathbb{C}))$. It was proved by Broussous-Matringe that for an irreducible smooth admissible Fréchet representation π of G of moderate growth, the dimension of the space of H-linear period of π is not greater then one. We give some necessary condition for the existence of a nonzero H-linear period of π, which proves the archimedean case of a conjecture by Prasad and Takloo-Bighash. Our approach is based on the H-orbit decomposition of the flag variety of G, and homology of principal series representations. This is a joint work with Miyu Suzuki (Kanazawa University).