数論セミナー

日時：2023 年 12 月 27 日（水）14：00　〜
場所：自然学系棟 D814 + Hybrid
講演者：高橋博樹 (慶応大学)
講演題目：
High complexity ergodic optimization for the Dyck-Motzkin shifts

アブストラクト：

Ergodic optimization aims to describe dynamically invariant probability measures which maximize the expectation of a given performance function. In a connection with thermodynamic formalism, maximizing measures may be viewed as ground states, i.e. equilibrium states at temperature zero. The structure of the set of ergodic maximizing measures sensitively depends on the regularity of the dynamical system and that of the performance function. There is a consensus that, for sufficiently regular dynamics and sufficiently regular performance functions, the maximizing measure is unique and supported on a single periodic orbit (low complexity). However, maximizing measures with complicated structures (e.g., positive entropy or large support) deserve attention, not only mathematically but also physically, due to their potential connection with orders of matter near temperature zero.

Shinoda (2018) proved that for a subshift of finite type and for a dense set of continuous performance functions, there exist uncountably many ergodic maximizing measures which are fully supported and have positive entropy. In this joint work with Kenichiro Yamamoto (Nagaoka), we extend Shinoda's result to the Dyck shift introduced by Krieger. In order to construct paths of ergodic maximizing measures with high complexity, we delve into the structure of the Dyck shift space.

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