

METU Mathematics General Seminar

Topological Ramsey numbers of countable ordinals

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Abstract

In broad terms, Ramsey theory can be described as the study of when certain “patterns” must appear in sufficiently large combinatorial structures. Ramsey theory of ordinals and cardinals has been an active research area since the introduction of partition calculus by Erdős and Rado in 1950’s. These studies were later generalized to topological spaces by Baumgartner. In recent years, Caicedo and Hilton initiated an investigation of closed and topological partition relations on countable ordinals and this investigation has attracted some attention.

In the first part of the talk, we will briefly review some old results in partition calculus of countable ordinals and their topological counterparts. In the second part of the talk, we will present some new bounds for the closed Ramsey numbers $R^{cl}(\alpha, 3)$ with $\alpha < \omega^2$.

The results in the second half of the talk are from joint work with Duman, Gönül, Saxena and Tamer. This work is supported by the Scientific and Technological Research Council of Türkiye (TÜBİTAK) under the Project Number 124F353.

The talk will be self-contained in the sense that no prior knowledge on Ramsey theory or set theory is necessary.

Date: Thursday, 22 October 2026

Time: 15:40

Place: Gündüz İkedâ Seminar Room