

Some pseudocompact-like properties in certain topological groups

Juliane Trianon-Fraga^{*1}, *Artur Hideyuki Tomita*²

jtrianon@ime.usp.br,
tomita@ime.usp.br

In 2014, García-Ferreira and Ortiz-Castillo introduced the concept of *selective pseudocompactness* for topological spaces. This notion is stronger than pseudocompactness for topological groups, as demonstrated by García-Ferreira and Tomita in 2015.

In this talk we will present the following results:

- (1) there exists a selectively pseudocompact group which is not countably pracomact;
- (2) assuming the existence of a single selective ultrafilter, there exists a group which has all powers selectively pseudocompact but is not countably pracomact;
- (3) there exists a countably compact group without non-trivial convergent sequences of size 2^c .

The result (3) answers a question of Bellini, Rodrigues and Tomita, and its proof is a slight modification of a proof done in [1].

- [1] M. HRUŠÁK, J. VAN MILL, U. A. RAMOS-GARCÍA, AND S. SHELAH, *Countably compact groups without non-trivial convergent sequences*, Trans. Amer. Math. Soc., 374 (2021), pp. 1277–1296.

¹The first author was supported by *São Paulo Research Foundation (FAPESP)*, grant 2019/12628-0

²The second author was supported by *São Paulo Research Foundation (FAPESP)*, grant 2021/00177-4