Construction of Hartman-Mycielski and separation axioms on semitopological groups

MARCELA LÓPEZ GAYTÁN*

Universidad Autónoma Metropolitana, Iztapalapa, CDMX, México. pantmarce@gmail.com

The construction of Hartman-Mycielski consists of associating every topological group G with a pathwise connected and locally pathwise connected topological group G^{\bullet} and such that G can be embedded as a closed subgroup into G^{\bullet} . It is known that both topological groups share many interesting properties. This construction was originally thought for topological groups and now we are studying it in semitopological groups. If we change the topological structure of a topological group we find significant differences in the behavior of properties such as axioms of separation, cardinal functions and symmetry-like properties. When we study semitopological and paratopological groups we also find important differences in the behavior of some separation axioms. The goal of this talk is to present some of the most important separation axioms that are shared between G and G^{\bullet} , when G is a semitopological (paratopological) group.

References

- T. Banakh, A. Ravsky, Each regular paratopological group is completely regular, Proceedings of the American Mathematical Society, 145(3) (2017) 1373–1382.
- [2] S. Hartman and J. Mycielski, On embedding of topological groups into connected topological groups, Colloq. Math. 5 (1958) 167–169.
- [3] M. Tkachenko, Paratopological and semitopological groups vs topological groups, Recent Progress in Topology III, Atlantis Press, 2014, Chapter 20, 825–882.

^{*}This is joint work with Iván Sánchez Romero (Universidad Autónoma Metropolitana) and Manuel Sanchis (Universitat Jaume I).