Generics in a measurable wreath product

Rafael Zamora
Universidad de Costa Rica

Abstract: Let G be a Polish group. We consider the following semi-direct product:

$$\tilde{G} := L_0([0,1], G) \rtimes \mathrm{Aut}([0,1], \mu),$$

where $L_0([0,1], G)$ is the group of measurable functions from $[0,1]$ to G (up to equality almost everywhere). With the topology of convergence in measure, it is a Polish group. We show that if G have dense orbits, then so does $\tilde{G}$. However, that is not the case for comeager orbits (i.e, generics). We also study the case for topometric generics, defined by Ben Yaccov, Berenstein and Melleray. Ample topometric generics gives a weaker version of automatic continuity, however it has been used succesfully by the latter authors and others to show automatic continuity for several groups.

This is joint work with Alexander Berenstein.