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Amenability and Extreme Amenability of Automorphism Groups of Hrushovski Generic Structures

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In a seminal work [1] Kechris, Pestov and Todorcevic have shown that the automorphism group of an ordered Fraïssé-limit structure is extremely amenable if and only if its ordered Fraïssé class has the Ramsey property. With the similar approach Tatch Moore in [2] has shown that the automorphism group of a Fraïssé-limit structures is amenable if and only if its Fraïssé class has another combinatorial property called the convex Ramsey property. We will generalize similar correspondences between automorphism groups of Hrushovski-Fraïssé generic structures of smooth classes, and modified versions of Ramsey properties of their smooth classes. Using these correspondences, we show that the automorphism group of ab-initio generic structures that are obtained from pre-dimension functions with rational coefficients are not amenable. Moreover, we show that automorphism groups of ordered ab-initio generic structures, for both cases of collapsed and uncollpased, are not extremely amenable.

This is a joint work with Hamed Khalilian and Massoud Pourmahdian and can be found in [3].

References

[1] A. Kechris, V. Pestov, and S. Todorcevic, *Fraïssé limites, Ramsey theory, and topological dynamics of automorphism groups*, GAFA, 2005, 106 -189.

[2] J. Tatch Moore, *Amenability and Ramsey theory*, Fund. Math., 2013, 220, 263-280.

[3] Z. Ghadernezhad, H. Khalilian, and M. Pourmahdian, *Automorphism groups of generic structures: Extreme amenability and amenability*, ArXiv, August 2015.