

INFINITELY LUDIC FRAÏSSÉ THEORY

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The study of the combinatorics of Fraïssé classes has recently received a great deal of attention. These Fraïssé classes are usually explored in a model theoretic context, but Fraïssé classes have also been studied with a categorical framework.

We present the *category of games*, in which some of the properties used in the usual category theoretical approach to Fraïssé theory fail to hold. Yet, we are still able to obtain a universal, countable, homogeneous and injective game with respect to finite games which is also the unique limit of any Fraïssé sequence of finite games.

This example motivates and provides us with a game theoretical way to expand the current approach to Fraïssé theory within category theory.

REFERENCES

- [1] M. Duzi, P. Szeptycki, W. Tholen. Infinitely ludic categories. *arXiv*, 2024.
- [2] R. Fraïssé. Sur l'extension aux relations de quelques propriétés des ordres. *Ann. Sci. École Norm. Sup.*, 71:363–388, 1954.
- [3] W. Kubiś. Fraïssé sequences: Category-theoretic approach to universal homogeneous structures. *Annals of Pure and Applied Logic*, 165(11):1755–1811, 2014.

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