

can be added by a stationary-set-preserving poset. We characterize when this happens in terms of a game which is a variant of the Model Existence Game. We then give a sufficient condition for this in terms of generic embeddings.

Abstract taken directly from the thesis

E-mail: obrad@math.ucla.edu

URL: <https://hal.science/view/index/docid/5273407>

JUVENAL MURWANASHYAKA. *Papers on weak first-order theories and decidability problems*, University of Oslo. 2023. Supervised by Lars Kristiansen, Dag Normann, and Tom Lindstrøm. MSC: 03B10, 03B25, 03D35, 03D40, 03F25, 03F30, 68R15. Keywords: decidability, interpretability, sequential theories, weak arithmetic.

Abstract

The dissertation consists of an introductory chapter and eight published articles centered around the following topics: (1) calibration of the interpretability strength of weak first-order theories; (2) determination of the (un)decidability of fine-grained fragments of the intended models of the aforementioned theories; and (3) investigation of algebraic properties of the lattice of interpretability degrees of computably enumerable essentially undecidable theories.

1. J. Murwanashyaka, A weak theory of building blocks. *Mathematical Logic Quarterly*, vol. 70 (2024), pp. 233–254. doi: [10.1002/malq.202300015](https://doi.org/10.1002/malq.202300015)
2. J. Murwanashyaka, Hilbert's tenth problem for term algebras with a substitution operator. *Computability*, vol. 13 (2024), nos. 3–4, pp. 433–457. doi: [10.3233/COM-230444](https://doi.org/10.3233/COM-230444)
3. J. Murwanashyaka, Weak essentially undecidable theories of concatenation, part II. *Archive for Mathematical Logic*, vol. 63 (2024), pp. 353–390. doi: [10.1007/s00153-023-00898-y](https://doi.org/10.1007/s00153-023-00898-y)
4. J. Murwanashyaka, F. Pakhomov, and A. Visser, There are no minimal essentially undecidable theories. *Journal of Logic and Computation*, vol. 34 (2024), no. 6, pp. 1159–1171. doi: [10.1093/logcom/exad005](https://doi.org/10.1093/logcom/exad005)
5. J. Murwanashyaka, Weak essentially undecidable theories of concatenation. *Archive for Mathematical Logic*, vol. 61 (2022), nos. 7–8, pp. 939–976. doi: [10.1007/s00153-022-00820-y](https://doi.org/10.1007/s00153-022-00820-y)
6. J. Murwanashyaka, Weak sequential theories of finite full binary trees, *Revolutions and Revelations in Computability* (U. Berger, J. N. Y. Franklin, F. Manea, and A. Pauly, editors), CiE 2022, Lecture Notes in Computer Science, Vol. 13359, Springer International Publishing, 2022, pp. 208–219. doi: [10.1007/978-3-031-08740-0_18](https://doi.org/10.1007/978-3-031-08740-0_18)
7. L. Kristiansen and J. Murwanashyaka, First-order concatenation theory with bounded quantifiers. *Archive for Mathematical Logic*, vol. 60 (2021), nos. 1–2, pp. 77–104. doi: [10.1007/s00153-020-00735-6](https://doi.org/10.1007/s00153-020-00735-6)
8. L. Kristiansen and J. Murwanashyaka, On interpretability between some weak essentially undecidable theories, *Beyond the Horizon of Computability* (M. Anselmo, G. Della Vedova, F. Manea, and A. Pauly, editors), CiE 2020, Lecture Notes in Computer Science, Vol. 12098, Springer International Publishing, 2020, pp. 63–74. doi: [10.1007/978-3-030-51466-2_6](https://doi.org/10.1007/978-3-030-51466-2_6)

Abstract prepared by Juvenal Murwanashyaka

E-mail: murwanashyaka@math.cas.cz

URL: <http://hdl.handle.net/10852/104677>