► ANDREAS WEIERMANN, A unifying approach to Goodstein principles.

Institute for Analysis, Logic and Discrete Mathematics, Ghent University, Krijgslaan 281 S8, 9000 Ghent, Belgium.

E-mail: Andreas.Weiermann@UGent.be.

The Goodstein principle is arguably the most elementary principle which is independent of first order Peano arithmetic. In our presentation we discuss general properties of Goodstein principles which allow to formulate natural variants of the Goodstein principle which do not depend an a specifc notion of base-k representations of natural numbers. (This is in part joint work with T. Arai, D. Fernández Duque, and S. Wainer.)

[1] T. ARAI, D. FERNÁNDEZ DUQUE, S. WAINER AND A. WEIERMANN. Predicatively unprovable termination of the Ackermannian Goodstein process, submitted.

[2] E. A. CICHON. Short proof of two recently discovered independence results using recursion theoretic methods. Proceedings of the American Mathematical Society vol. 87 (1983) 704-706.

[4] L. KIRBY AND J. PARIS. Accessible independence results for Peano arithmetic. Bulletin of the London Mathematical Society vol. 14 (1982), no. 4, 285–293.

[5] A. WEIERMANN Ackermannian Goodstein principles for first order Peano arithmetic. Sets and computations, Lecture Notes Series Institute Mathematical Sciences National University of Singap., vol. 33, World Scientific Publishing, Hackensack, NJ, 2018, 157–181.