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Athar Abdul-Quader* (athar.abdulquader@purchase.edu) and **Roman Kossak**. *Neutrally expandable models of arithmetic*.

A subset of a model of PA is called *neutral* if it does not change the definable closure relation. A model of PA with undefinable neutral classes is called *neutrally expandable*. Clearly, every 0-definable set is neutral in any model. We give examples of neutrally expandable models and prove that recursively saturated models are not neutrally expandable. We also show that neutrality is not a first-order property: in particular, there is no theory T extending PA such that, for any recursively saturated model M and any set X , X is neutral iff $(M, X) \models T$. This work is inspired by work by Chatzidakis and Pillay, *Generic structures and simple theories*, ***Annals of Pure and Applied Logic***, vol. 95 (1998), no. 1-3, pp. 71–92 and Dolich, Miller, and Steinhorn, *Extensions of ordered theories by generic predicates*, ***The Journal of Symbolic Logic***, vol. 78 (2013), no. 2, pp. 369–387 and *Expansions of o-minimal structures by dense independent sets*, ***Annals of Pure and Applied Logic***, vol. 167 (2016), no. 8, pp. 684–706, who studied generic expansions of ordered structures. (Received September 21, 2018)