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**Ermek Nurkhaidarov\*** (esn1@psu.edu). *The Automorphism Group of a Recursively Saturated Model of Peano Arithmetic.*

Let  $M$  to be a countable recursively saturated model of Peano Arithmetic. If  $M$  has an element which is bigger than the standard cut  $\omega$  but smaller than any non-standard definable elements, we call such  $M$  *wide*. Pointwise stabilizers are the basic open subgroups of the automorphism group of  $M$ .

A countable recursively saturated model of Peano Arithmetic is characterized by two invariants: its first order theory and its standard system. We show that the automorphism group of a wide, countable recursively saturated models of Peano Arithmetic codes its standard system. From which we obtain:

**Theorem 1** *Suppose that  $M_1$  and  $M_2$  are wide, countable, recursively saturated models of Peano Arithmetic such that their automorphism groups are topologically isomorphic. Then  $\text{SSy}(M_1) = \text{SSy}(M_2)$ .*

This theorem is an improvement on a result Kossak-Schmerl 95, who proved it for arithmetically saturated models. (Received September 15, 2017)