1148-03-168 **Russell Miller*** (russell.miller@qc.cuny.edu), Mathematics Dept., Queens College – CUNY, 65-30 Kissena Blvd., Queens, NY 11367. *Interpretations between a field and its Heisenberg group.*

The Heisenberg group $H(F)$ of a field F is the upper-triangular subgroup of $GL_3(F)$. This essentially describes an interpretation of $H(F)$ in F, via Δ^0_1 formulas. There is a well-known Δ^0_1 interpretation of F in $H(F)$ as well, but it requires two parameters from $H(F)$.

A group led by Andrey Morozov recently produced a computable functor from the category of presentations of $H(F)$ to the category of presentations of F. (Each category consists of all structures with with domain ω that are isomorphic to the given one; the morphisms in the category are isomorphisms.) A theorem in [1] then proves that there must be an effective interpretation of F in $H(F)$ without parameters, possibly using computable infinitary Σ^0_1 formulas. We will describe the work of Morozov's group, which includes Alvir, Calvert, Harizanov, Knight, Soskova, Weisshaar, and the speaker, and we will discuss the interpretation that results from it.

References

[1] Computable Functors and Effective Interpretability; M. Harrison-Trainor, A. Melnikov, R. Miller, & A. Montalbán, *Journal of Symbolic Logic* **82** (2017) 1, 77–97.

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