Elementary number theory in weak fragments of arithmetic (abstract)

PAOLA D'AQUINO, *Dipartimento di Matematica, Seconda Università degli Studi di Napoli, Napoli, Italy. E-mail: paola.daquino@unina2.it*

Abstract

I will consider some classical results about primes in non standard models of $I\Delta_0$ and its extensions. In particular, I will study the residue fields of models of $I\Delta_0 + \Omega_1$ (where Ω_1 is the axiom guaranteeing that the function $(x, y) \mapsto x^{[\log y]}$ is total). I will prove that the residue fields of such models have a unique extension of finite degree n, for each $n \in \mathbf{N}$, and that the Galois group of such extensions are cyclic.

I will then extend these results to quotient fields of models of $I\Delta_0 + \Omega_1$.

References

[1] D'Aquino, P. and Macintyre, A., Non-standard finite fields over $I\Delta_0 + \Omega_1$, in *Israel Journal of Mathematics* 117 (2000), pp. 311–333.

[2] D'Aquino, P., Quotient fields of models of $I\Delta_0 + \Omega_1$, submitted.