

# REAL CLOSED FIELDS AND MODELS OF PEANO ARITHMETIC

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**Abstract:** We say that a real closed field is an IPA-real closed field if it admits an integer part (IP) which is a model of Peano Arithmetic (PA). In [2] we prove that the value group of an IPA-real closed field must satisfy very restrictive conditions (i.e. must be an exponential group in the residue field, in the sense of [4]). Combined with the main result of [1], we obtain a valuation theoretic characterization of countable IPA-real closed fields. Expanding on [3], we conclude the talk by considering recursively saturated o-minimal expansions of real closed fields and their IPs.

## References:

- [1] D'Aquino, P. - Kuhlmann, S. - Lange, K. : A valuation theoretic characterization of recursively saturated real closed fields , *Journal of Symbolic Logic*, **80**, 194-206 (2015)
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