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Polynomial rings and weak second-order logic. (English) Zbl 0592.03006
J. Symb. Log. 50, 953-972 (1985).

Given a model M of a first order language L , extensions of M to four multisorted extensions of L are given; they deal with finite subsets, finite sequences and hereditarily finite sets on M , so the theory of each of these four extensions might be called "the" weak second order theory of M . They are interpreted one in another as far as possible, and the weak second order theory of F is proved equivalent to the first order theory of the polynomial ring $F[X_i]_{i \in I}$, uniformly in any field F and any non-empty set I . Some results are also given about more general polynomial rings, especially $F[G]$, where F is a field and G a commutative orderable monoid.

MSC:

03B15 Higher-order logic; type theory (MSC2010)
12L12 Model theory of fields
03C60 Model-theoretic algebra

Cited in **2** Reviews
Cited in **5** Documents

Keywords:

[interpretation](#); [multisorted extensions](#)

Full Text: [DOI](#)

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