ON GENERALIZED WELL-FOUNDED MODELS FOR LOGIC PROGRAMS

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Dedicated to Professor Dr. Ion Vaduva at his 70-th anniversary

Abstract

We consider a general logic program in sense Gelder, a partial L-interpretation defined on a complete lattice of truth values, denoted L, introduced by us. For a partial L-interpretation there is a unique family of disjoint sets on Herbrand base of the program P. The notions of weak L-model and L-model for P are defined. For the program P and a logic value v, two operators are defined. The first one is denoted by G_v and the second one is denoted by $\overline{M}_v$. For a truth value v from L, using the two operators G_v and $\overline{M}_v$, a new operator $\overline{W}_v$ is defined for the program P. The fixed points of $\overline{W}_v$ constitute a new semantics called L-valued generalized well-founded semantics for P and v on a complete lattice L. In the case the lattice L contains only *true* and *false* values, the new well-founded semantics coincides with the classical well-founded semantics and it is more general than the L-valued well-founded semantics defined by us in a precedent article.