Caicedo, Andrés Eduardo; **Veličković, Boban**
The bounded proper forcing axiom and well orderings of the reals. (English) ‖ Zbl 1113.03039

Summary: We show that the bounded proper forcing axiom BPFA implies that there is a well-ordering of $\mathcal{P}(\omega_1)$ which is Δ_1-definable with parameter a subset of ω_1. Our proof shows that if BPFA holds then any inner model of the universe of sets that correctly computes $\aleph_2$ and also satisfies BPFA must contain all subsets of ω_1. We show as applications how to build minimal models of BPFA and that BPFA implies that the decision problem for the Härtig quantifier is not lightface projective.

MSC:

03E05	Combinatorial set theory (logic)
03E45	Constructibility, ordinal definability, and related notions
03E47	Other notions of set-theoretic definability
03E65	Other hypotheses and axioms (set theory)
03E40	Other aspects of forcing (set theory)
03C80	Logic with extra quantifiers and operators

Cited in **1** Review
Cited in **3** Documents

Keywords:

MRP; definable well-orderings; BPFA; inner model; minimal models; decision problem; Härtig quantifier

Full Text: DOI