

# Strong Completeness of Łukasiewicz Axioms

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For a given cardinal number  $\mathfrak{a}$ , we construct a totally-ordered MV-algebra  $M(\mathfrak{a})$  having the property that every totally-ordered MV-algebra of cardinality at most  $\mathfrak{a}$  embeds into  $M(\mathfrak{a})$ . In case  $\mathfrak{a} = \aleph_0$ , the algebra  $M(\mathfrak{a})$  is the first known MV-algebra with respect to which the deductive system for the infinitely-valued Łukasiewicz's propositional logic is strongly complete.