ARCIHMEDEAN CAUCHY-COMPLETE MV-ALGEBRAS FORM A VARIETY

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ABSTRACT. It is known that every archimedean MV-algebra A is a metric space, where the distance coincides with the supremum distance, when A is represented in $[0,1]^X$. We show that the class of archimedean Cauchy-complete MV-algebras, endowed with all MV-homomorphisms as maps, is an infinitary variety of algebras. Our varietal presentation is obtained by adding, to the theory of MV-algebras, an operation of countably infinite arity γ, which is intended to map 'enough' Cauchy-sequences $(a_0, a_1, a_2, \dots)$ to their limit, together with some additional axioms.