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FROM TOTAL TO PARTIAL ALGEBRAS

In this paper we study algebraic systems that consist of a set and partial operations on this set. For this purpose, we introduce a neutral element; that does not belong to the original universes, as the value of the operations where they are not defined.

In Section 2 we give a logical system for partial algebras, very similar to the one of A. Tarski introduced in *A simplified formalization of predicate logic with identity*, **Archiv für Mathematische logik und grundlagen forschung** 7 (1965). We also prove in this section that this system is complete. Then we extend two results for total algebras to partial algebras, the first one is given in Section 5, and is an extension of the characterization of the universal classes UC_{Δ}, that appears in A. Tarski in *Contributions to the theory of models I*, **Indagationes Mathematicae** 16 (1954). The second one is given in Section 6, and is a generalization of the preservation problem for Horn's sentences that appears in H. I. Keisler, *Reduced products and Horn classes*, **Trans. Am. Soc.** 117 (1965).

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