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THE POWER EQUATION*

MOSHE GOLDBERG † AND ELIAHU LEVY †

Abstract. Let \mathcal{A} be a power-associative algebra over a field \mathbb{F} , either \mathbb{R} or \mathbb{C} . The purpose of this paper is to study real-valued solutions of the *power equation* on \mathcal{A} , i.e., functions $f : \mathcal{A} \to \mathbb{R}$ which satisfy $f(a^k) = f(a)^k$ for all $a \in \mathcal{A}$ and $k = 1, 2, 3, \ldots$

 ${\bf Key}$ words. Power-associative algebras, The power equation.

AMS subject classifications. 16B99, 17A05, 17A35, 17D05, 39B22.

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[†]Department of Mathematics, Technion–Israel Institute of Technology, Haifa 32000, Israel (goldberg@math.technion.ac.il, eliahu@math.technion.ac.il).