Sultan Catto* (scatto@gc.cuny.edu), 365 Fifth Avenue, New York, NY 10016-4309. Role of Quaternions, Octonions, Jordan and related algebras in physics.

Elegant algebras, specifically quaternions and octonions, Jordan and related algebras have arisen in a concerted manner in unified theories of fundamental interactions in nature. We shall give a survey of these exceptional structures, and their general aspects interwoven with supersymmetry (realized linearly and nonlinearly), with superstrings, supermembranes, and M-theory. This talk will deal with the historical aspects of algebraic, group theoretical, functional, geometrical, and topological aspects of quaternions and octonions. If time permits, we will conclude with an example and application to color algebras and dynamical supersymmetry leading to multiquark bags in nature. (Received September 10, 2020)