1053-30-174   **Fabrizio Colombo** (`fabrizio.colombo@polimi.it`), Politecnico di Milano, Italy, **Graziano Gentili*** (`gentili@math.unifi.it`), Università di Firenze, Dipartimento di Matematica "U. Dini", viale Morgagni, 67/a, 50134 Firenze, Italy, **Irene Sabadini** (`irene.sabadini@polimi.it`), Politecnico di Milano, Italy, and **Daniele C. Struppa** (`struppa@chapman.edu`), Chapman University, CA. *Extension results for slice regular functions of a quaternionic variable.*

The theory of slice regular functions of a quaternionic variable has been introduced in 2006. Since then, the theory has been extensively studied in a series of papers which show the richness of this class of functions. This theory has demonstrated its interest by allowing a new application to the theory of quaternionic linear operators. The theory of slice regular functions is quite different from the more classical theory of regular functions in the sense of Cauchy-Fueter and, when compared with such theory, it shows many new and interesting features, such as the fact that it includes both polynomials and power series in the variable q.

In this paper we prove a new representation formula for slice regular functions, which shows that the value of such a function f at a point $q = x + yI$ can be recovered by the values of f at the points $x + yJ$ and $x + yK$ for any choice of imaginary units I, J, K. This result allows us to extend the known properties of slice regular functions defined on balls centered on the real axis to a much larger class of domains, called axially symmetric domains. We show, in particular, that axially symmetric domains play, for slice regular functions, the role played by domains of holomorphy for holomorphic functions. (Received September 02, 2009)

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