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A possible visual image of the extended monogenous function

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ABSTRACT.

The monogenous functions defined on $R^4 \to R^4$ were introduced by G.C. Moisil. If we start from monogenous functions on a quaternion, through particularization we only find the monogenity condition $\frac{\partial w}{\partial \overline{z}} = 0$ for a function $w = f(z) : C \to C$. In this article the notion of monogenity is extended from the common complex analysis over to the quaternion functions of two variables, of the following aspect:

$$K = x + iy + ju(x, y) + kv(x, y) = z + jw(x, y) \tag{0.1}$$

and we have visualized the surfaces (S) attached to this quaternion

$$(S) \quad \overline{r} = iy + ju(x, y) + kv(x, y) \tag{0.2}$$

in monogenity conditions. A few surfaces attached to some elementary monogenous functions have been visualized.

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