Refutation digest 2020.04.21

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Abstract: We evaluate these topics using the Meth8/VŁ4 modal logic model checker:

Hamilton’s quaternion multiplication as a bivalent operation.

New approach: Most of the papers we evaluate are found as titles at a private preprint system of Cornell Library. Since 2017 we found so many mistakes that now we opt to streamline our approach. For the instant refutation digest title above, we list artifacts in the abstract section above. The respective from-reference, text block, and remarks then follow beginning on separate pages. Conjectures refuted form a non tautologous fragment of the universal logic VŁ4.

We assume the method and apparatus of Meth8/VŁ4 with Tautology as the designated proof value, F as contradiction, N as truthity (non-contingency), and C as falsity (contingency). The 16-valued truth table is row-major and horizontal, or repeating fragments of 128-tables, sometimes with table counts, for more variables. (See ersatz-systems.com.)


Abstract. ... Based on the quaternion probability, the quaternion probability multiplication has been proposed, which is a method of multiplication conforming to the law of quaternion multiplication. ...

Definition 2.3. (Quaternion) [41]

\[ q = a + bi + cj + dk \]  (3)

Given two quaternions, \( q_1 = a + bi + cj + dk \) and \( q_2 = e + fi + gj + hk \), the definition of quaternions multiplication as follow:

Definition 2.4. (Quaternion Multiplication) [41]

\[
q_1q_2 = (ae - (bf + cg + dh)) + \\
(ce + af + ch - dg)i + \\
(de + ah + bg - cf)j + \\
(bf + cg + dh)k
\]

(4)

Remark 2.4.1: We evaluate the multiplication in 2.4.1 by substituting from 2.3.1.

Let \( a, b, c, d, e, f, g, h, i, j, k, p, q, r, s, t, u, v, w, x, y, z \):

\[ (((p+(q&x))+((r&y)+s&z)))&((t+(u&x))+((v&y)+(w&z))))= \]
((((p&t)-((q&u)+((r&v)+(s&w))))+((((q&t)+(p&u))+((r&w)-(s&v))&x)) + (((r&t)+(p&v))+((s&u)-(q&w)))&y)+((((s&t)+(p&w))+((q&v)-(r&u)))&z)));
Remark 2.4.2: Eq. 2.4.2 is not tautologous, hence refuting that multiplication as a bivalent operation and denying Hamilton's quaternion multiplication.