Refutation of deformation field of van Leunen

Abstract: The arguments by implication or equivalence of van Leunen's deformation field are refuted.

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). Results are a 16-valued truth table in row-major and horizontal, or repeating fragments of 128-tables for more variables.

LET _ right-arrow accent vector; p, q, r, s: ∇_r, $\underline{\nabla}$, ξ_r, $\underline{\xi}$;
~ Not; + Or; - Not Or; & And, x; > Imply;
% possibility, for any one or some, ∃; # necessity, for every or all, ∀.
(s=s) T tautology; (s@s) **F** contradiction;
(%s>#s) 1, N truthity; (%s<#s) 0, C falsity.

From: van Leunen, J.A.J. (2018). Mass and field deformation. vixra.org/pdf/1809.0564v1.pdf

> A special field supports the hop landing location swarm that resides on the floating platform. It reflects the activity of the stochastic process and it floats with the platform over the background platform. It is characterized by a mass value and by the uniform velocity of the platform with respect to the background platform. The real part conforms to the deformation that the stochastic process causes. The imaginary part conforms to the moving deformation. The main characteristic of this field is that it tries to keep its overall change zero. We call ξ the ***deformation field***.
>
> The first order change of a field contains five terms. Mathematically, the statement that in first approximation nothing in the field ξ changes indicates that locally, the first order partial differential ∇ξ will be equal to zero.

$$\zeta = \nabla\xi = \nabla_r \xi_r - \langle \underline{\nabla}, \underline{\xi} \rangle + \underline{\nabla} \xi_r + \nabla_r \xi_r \pm \underline{\nabla} \text{ x } \underline{\xi} = 0 \quad (1.0)$$

We rewrite Eq. 1.0 excluding the first two terms in the equality.

$$\nabla_r \xi_r - \langle \underline{\nabla}, \underline{\xi} \rangle + \underline{\nabla} \xi_r + \nabla_r \xi_r \pm \underline{\nabla} \text{ x } \underline{\xi} = 0 \quad (1.1)$$

((((p&r) - (q&s)) + ((q&r) + (p&r))) + ((q&s) + ~(q&s))) = (s@s) ;
FFFF FFFF FFFF FFFF (1.2)

The terms that are still eligible for change must together be equal to zero. These terms are:

$$\nabla_r \underline{\xi} + \underline{\nabla} \xi_r = 0 \quad (2.1)$$

((p&s)+(q&r))=(s@s) ; TTTT TT**FF** T**F**T**F** T**FFF** (2.2)

In the following text ξ plays the role of the vector field and ξ_r plays the role of the scalar gravitational potential of the considered object.

The argument is that Eqs. 2.1 imply 1.1. (3.1)

(((p&s)+(q&r))=(s@s)) > (((((p&r)-(q&s))+((q&r)+(p&r)))+((q&s)+~(q&s)))
=(s@s)) ; **FFFF** **FF**TT **F**T**F**T **F**TTT (3.2)

Remark: Although Eqs. 1.1 and 2.1 are equivalent to zero, the implication argument of 3.1 may *not* omit the zero value.

However, a derivative of Eqs. 1.1 and 2.1 is that Eqs. 1.1 and 2.1 are *equivalent* by omitting the zero value. (4.1)

((p&s)+(q&r)) = ((((p&r)-(q&s))+((q&r)+(p&r)))+((q&s)+~(q&s))) ;
FFFF **FF**TT **F**T**F**T **F**TTT (4.2)

Eqs. 1.2, 2.2, 3.2, and 4.2 as rendered are *not* tautologous. This refutes the deformation field of van Leunen.