

## Refutation of the retract neutrosophic crisp set

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**Abstract:** Demonstration of the retract neutrosophic crisp set is denied by another example of egregious logic in the Smarandache neutrosophy.

We assume the method and apparatus of Meth8/VL4 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. (See ersatz-systems.com.)

LET  $p, q, s: A, B, co; + Or, \cup; \& And, \cap; = Equivalent.$

From: Salama, A.A.; Hewayda, E.G.; Nasr, A.M. (2018). Retract neutrosophic crisp system for gray scale image. rsalama44@gmail.com via vixra.org/pdf/1804.0170v1.pdf

3.4 Proposition [from 2015]

$$co(A \cap B) = coA \cup coB \quad (3.4.1.1)$$

$$(s\&(p\&q))=((s\&p)+(s\&q)) ; \quad TTTT \ TTTT \ TFFT \ TFFT \quad (3.4.1.2)$$

$$co(A \cup B) = coA \cap coB \quad (3.4.2.1)$$

$$(s\&(p+q))=((s\&p)\&(s\&q)) ; \quad TFFT \ TFFT \ TTTT \ TTTT \quad (3.4.2.2)$$

Eqs. 3.4.1.2 and 3.4.2.2 as rendered are *not* tautologous. Consequently, everything subsequent to Sec. 3.3 is tainted.

**Remark:** Prior definitions in Sec. 2 for neutrosophic crisp sets (NCS (2015)) are also *not* tautologous, although not directly relevant to Eqs. 3.4.

LET  $p, q, r, s: A_1, A_2, A_3, X; @ Not Equivalent; (s@s) null.$

$$(((p\&q)=(s@s))\&((p\&r)=(s@s)))\&((q\&r)=(s@s)) ; \quad TTF \ TFFF \ TTF \ TFFF \quad (1) \ NCS-Class1$$

$$(((p\&q)=(s@s))\&((p\&r)=(s@s)))\&((q\&r)=(s@s))\&(((p+q)+r)=s) ; \quad TFFF \ FFFF \ FTTF \ TFFF \quad (2) \ NCS-Class2$$

$$(((p\&q)\&r)=(s@s))\&(((p+q)+r)=s) ; \quad TFFF \ FFFF \ FTTF \ TTF \quad (3) \ NCS-Class3$$