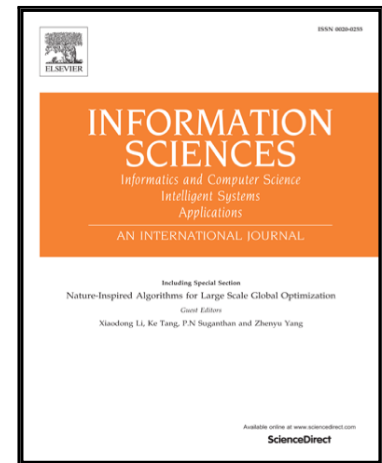


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A note on "On the conditional distributivity of nullnorms over uninorms"[*Information Sciences*, 317 (2015) 157-169]

Dragan Jočić

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A note on "On the conditional distributivity of nullnorms over uninorms"[Information Sciences, 317 (2015) 157-169]

Dragan Jočić

Novi Sad Business School, Vladimira Perića-Valtera 4, 21000 Novi Sad, Serbia
e-mail:jocicndragan@gmail.com

Abstract

In this paper the study of the conditional distributivity of nullnorms over uninorms given in [2] is revised. The result from Theorem 8 from the mentioned paper is corrected and its now given in the correct form.

Keywords: uninorm, nullnorm, conditional distributivity

1 The main result

The conditional distributivity of continuous nullnorm with respect to a uninorm with the continuous underlying t-norm and t-conorm was studied in Section 4 of [2]. This problem can be written as

$$F(x, U(y, z)) = U(F(x, y), F(x, z)), \quad x, y, z \in [0, 1], \quad U(y, z) < 1 \quad (1)$$

where F is a continuous nullnorm, and U is a uninorm with the continuous underlying t-norm and t-conorm, i.e., $U \in WCU$.

In the mentioned paper the authors considered two cases depending upon whether uninorm U is conjunctive or disjunctive. The result from Theorem 8 for conjunctive uninorm is incorrect, i.e., the cases (ii) and (iv) can not happen. Moreover, the case when U is conjunctive uninorm coincides with the case when uninorm U is from the class U_{\min} (see Theorem 17 in [1]).

First, the original form of Theorem 8 from [2] is given.

Theorem 1 (Theorem 8 in [2]) *A continuous nullnorm F with an absorbing element $k \in (0, 1)$ and a conjunctive uninorm $U \in WCU$ with neutral element $e \in (0, 1)$ satisfy Eq. (1) if and only if one of the following cases is fulfilled:*

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