

A Contour View on Uninorm Properties

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Abstract: Any given increasing $[0, 1]^2 \rightarrow [0, 1]$ function is completely determined by its contour lines. In this paper we show how each individual uninorm property can be translated into a property of contour lines. In particular, we describe commutativity in terms of orthosymmetry and we link associativity to the portation law and the exchange principle. Contrapositivity and rotation invariance are used to characterize uninorms that have a continuous contour line.

Keywords: uninorm; Contour line; Orthosymmetry; Portation law; Exchange principle; Contrapositive symmetry; Rotation invariance; Self quasi-inverse property;

AMS Subject Classification: