

REPRESENTATION AND CONSTRUCTION OF  
INTUITIONISTIC FUZZY  $\mathcal{T}$ -PREORDERS  
AND FUZZY WEAK  $\mathcal{T}$ -ORDERS

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**Abstract**

In this paper, we consider the problem of representation and construction of intuitionistic fuzzy preorders and weak orders, where many fundamental representation results extending those of Ulrich Bodenhofer *et al.* are presented.

**Keywords:** intuitionistic fuzzy set, intuitionistic fuzzy ordering relation, intuitionistic fuzzy equivalence relation, intuitionistic fuzzy weak order, intuitionistic fuzzy t-norm, residuated lattice.

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