

## **Aggregation of infinite chains of intuitionistic fuzzy sets and their application to choices with temporal intuitionistic fuzzy information**

### **ABSTRACT**

We propose the first method for aggregating infinite sequences of intuitionistic fuzzy sets in the literature. This new tool allows us to aggregate an infinite list of intuitionistic fuzzy sets over time –a particular case of temporal intuitionistic fuzzy sets– into a traditional intuitionistic fuzzy set. As an application, we define scores and accuracy degrees of temporal intuitionistic fuzzy elements. Then we use these tools to solve the decision making problem where data come in the form of intuitionistic fuzzy sets along an indefinitely long number of periods.

**Keyword:** Intuitionistic fuzzy set; Temporal intuitionistic fuzzy set; Intertemporal choices; Overall score; Aggregation function; Decision-making