

ANALYSIS OF VARIANCE BASED ON FUZZY INTERVAL DATA USING MOMENT CORRECTION METHOD

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ABSTRACT. *As the method to compare with the several populations, the analysis of variance, ANOVA, has been used. On the other hand, there is a case that the human vagueness is included in the observed data. We treat this data as fuzzy interval data. But, as usual, the ANOVA cannot treat this data. So, in this research, we propose the method of ANOVA which can treat the fuzzy interval data by using the concept of fuzzy sets. And, the usefulness of our method is investigated by computer simulation.*

Keywords: Fuzzy interval data, Moment correction, ANOVA

1. Introduction. When we observe the various data, there is a case that we observe the data including vagueness, because the exact value cannot be obtained under certain circumstances. In such a case, it is considered that vagueness is removed by increasing the accuracy of observation. However, if the number of items increase then the number of variables will increase, and the data processing becomes more complicated. If the data including vagueness can be processed by the analogous methods of usual statistical methods with the proper accuracy, the processing method will be useful.

The data including vagueness can be treated using the concept of fuzzy sets [1]. So, some methods for the data analysis using the fuzzy theory had been proposed [2-7]. And the vagueness which is included in data can be expressed using the membership function of the fuzzy set. Therefore, the vague data can be expressed by the membership function. In this case, this data is processed directly using the membership function in the statistical process. It is necessary to perform the calculation precisely using the membership function, and the calculation process becomes more complicated compared with the usual