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A Novel Dual Factor Fuzzy Time Series Forecasting based on new Fuzzy sets and Interval Definition by Evolution Strategies

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ABSTRACT

This paper proposes a new dual factor time-invariant fuzzy time series method that is capable of forecasting stock market Price Index. The proposed approach uses a new fuzzy logic relationship definition. According to the utilized membership degrees used to define the fuzzy relationships, each datum may belong to two distinct intervals rather than only one interval. This assumption, which has not been considered in the other studies, contributes to better forecasting results. In addition, an appropriate meta-heuristic algorithm for continuous solution schemes, namely evolution strategies (ES), is utilized to identify the appropriate interval lengths. The proposed approach has been tested on TAIFEX index. The computational results showed that the proposed approach outperforms the former studies.