学号 2021192010 姓名 王曦

**Abstract**: Precise prediction to the financial time series has great influence on not only the economic regulation and control of the countries but also individual or institutional investors. Recently, deep learning has been generally used in predicting financial time series. However, due to the fluctuation of series and multiple variable factors, traditional statistics and single deep learning face great difficulty in predicting the trend of financial time series. This paper presents a new deep mode decomposition coding and decoding model based on mechanism of attention (AED-DEMD), puts forward a new type of tube to reduce the impact of DEMD for its need of artificial selection and lack of generalization. Besides, based on the forecast of the trend of multi-step financial time series, a new optimal performance selection model Opemod bottom on bi-ended continuation mode decomposition has been showed. A large number of experiments show that Opemod performed perfectly in most indexes.

**Keywords**: Deep Learning, financial time series, prediction, Empirical Mode Decomposition, Long Short Term Memory