

عنوان مقاله:

A hybrid SLCARMA-GRUNN model for modelling periodic highfrequency data

محل انتشار:

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خلاصه مقاله:

The intra-day return of high-frequency financial data have periodic structure. These data have volatilities and existing works assumes it is a stationary process. However, there is evidence for the presence of intra-day periodicity or seasonality in volatility. Due to the inherent periodicity and non-linear characteristics of high-frequency data, the accurate prediction of these data is critical to the market activity. In order to present a model that supports this feature, we introduce a hybrid semi Lévy driven continuous-time ARMA (SLCARMA)-gate recurrent unit neural network (GRUNN) model. The hybrid SLCARMA-GRUNN model based on the traditional method that assume the linear components and non-linear components should be linearly added. The proposed hybrid model is applied to ۳۰-minute squared log returns of Dow Jones Industrial Average indices

کلمات کلیدی:

CARMA model, Gated recurrent unit neural network, Kalman filter, Periodically correlated process, Recurrent neural networks, Semi-Lévy process

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