Abstract

COVID-19 has spread around the world and has not subsided. The COVID-19 pandemic first appeared at the end of 2019. It has become a global threat to human life and society. COVID-19 cases began to developsince March 2, 2020 in Indonesia. Until now, positive cases of COVID-19 fluctuated greatly. Therefore, it isnecessary to estimate extreme value addition COVID cases-19 in East Java by involving the patient cure rate in the province based on the time series data. This study aims to anticipate a spike in cases and help make regulations for handling COVID-19. In this study, the modeling was carried out using Vector Autoregressive Moving Average (VARMA) model, then to estimate the spike in cases that occurred in the range from July 1, 2020 to February 28, 2021, Block Maxima was used. Estimation of extreme value violations using Block Maxima with the best model VARMA(5,1) and 0.15 MAPE results provide a fairly good forecasting for value violations with a value of 0.2983, so that if there is a spike then 70.17% will reach 573 cases.

Keywords: COVID-19, VARMA, East Java, upper limit estimat*e*, extreme value.