A Study on Building a Prediction Model of Fine Dust (PM10) And Carbon Monoxide (CO) Using VAR Model.

- **Author(s):** Jae-Hyun Kim; Chang-Ho An

- **Abstract:** In this study, a prediction model is proposed using the vector autoregression (VAR) model, which is a vector time series model. The observation data was obtained from a measurement system installed in Jungdaebu Middle School, Dongjak-gu, Seoul. Fine dust (PM10) and carbon monoxide (CO) were used as time series variables of the proposed VAR (2) model, and the applicability of the model was checked by performing the unit root test and Granger causality test after the first order differencing of the two time series variables. The validity of the proposed prediction model was confirmed by performing the Schematic Representation of the cross-correlation matrix (CCM) and the multivariate Portmanteau test. Prediction by the model resulted that fine dust (PM10) and carbon monoxide (CO) would decrease in the short term.

- **Keywords:** Fine dust (10PM), Carbon monoxide (CO), VAR model. Granger causality test, Cross-correlation matrix, Multivariate Portmanteau test