

**STATISTICAL COMPARISON OF TWO SERIES OF PARTICULATE  
MATTER  $PM_{10}$  IN THE CITY OF SÃO PAULO**

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- **ABSTRACT:** *Large urban centres have had to handle problems related to the air pollution. The inhaled particles  $PM_{10}$  are an atmospheric pollutant that affects most of such urban centres, among which, the city of São Paulo. The  $PM_{10}$  is regarded as an indicator of the air quality, a characteristic that highlights the relevance in studying it. Thus, the aim of this study was to investigate whether a time series of maximum daily pollution values of inhaled particles ( $PM_{10}$ ) observed at the Centro and Santo Amaro stations – both located in the city of São Paulo - have been generated from the same stochastic process. The data were collected for the period from January, 1st, 2007 to December, 19th, 2009. The following statistical methods were applied: the test for the equality of autocorrelation functions, the cumulative sum test, and a procedure of time series subtraction. The conclusion drawn by this study was that the two data series analysed were not generated by the same stochastic process. Hence, the data on air pollution levels obtained in one of the stations studied are not enough to explain the same type of data obtained in the other one.*
- **KEYWORDS:** *Time series; comparison tests; series of maximum pollution values; particulate matter.*

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