

Greenhouse Gas Emissions Analysis and Forecast evaluation in the South Eastern part of Europe

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Recently, greenhouse gases (GHG), which include: carbon dioxide, methane, nitrous oxide and other gases, are considered to be the fundamental cause of global climate change. This issue related to climate change has received conclusive attention at a global level. In the specialized literature, carbon dioxide has been considered the most significant gas contributing to global climate change. In this regard, our paper presents an analysis of greenhouse gas emissions in Romania, together with a prediction component for the following period. For this study, data were taken from the National Air Quality Monitoring Network in Romania, with historical data series selected for analysis. In order to structure the results, the collected data were initially analyzed using statistical investigation methods. The trends in greenhouse gas emissions (GHG) in Romania were analyzed both by ANOVA and multivariate analysis methods. In the second part, we implemented a numerical algorithm of the FIR -LRS type to build a dynamic model that allows the investigation of the dynamics with an error below 10%. The results obtained for the set of selected monitoring points showed that the numerical analysis of the FIR type of total GHG emissions in Romania had a higher forecast accuracy than the statistical analysis method. From the set of statistical and numerical methods used we can conclude that emissions are on a descending scale, and the choice of an appropriate method is important in data analysis.

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