



Traffic Emissions And Solar Radiation Effect On Formation Of The Ozone

Deniz Hazel Diren and Hüseyin Toros

Istanbul Technical University, Faculty of Aeronautics and Astronautics, Department of Meteorological Engineering, Istanbul, Turkey, (toros@itu.edu.tr)

Urban climate is one of the most important issues in this century. Millions of people live in mega cities where the environment, weather and air affected by human activities negatively. Quality of air has a vital importance for life; however, air pollution caused by emissions, threats human life and environment. Istanbul is one of the largest cities in the world which has about 14 million population. Because of industrial, domestic and traffic emissions, pollutant concentrations in Istanbul could overcome the critical values of European standards associatively with the meteorological conditions. The main pollution source in Istanbul is the traffic emissions. Primary pollutants such as NO caused from vehicles, can transform to secondary pollutants like tropospheric O₃ by chemical processes. Main indicator of these processes is the solar radiation. In this study, it will be searched the relation between NO and solar radiation to form the tropospheric ozone. Statistical analysis of the emission and radiation data is used for this study. By this means, the question of how solar radiation affects the urban air quality which is exposed intense traffic emissions, will be discussed.

Acknowledgements:

The authors are grateful to Istanbul Metropolitan Municipality for the air quality data. This study is a background of the online integrated air quality and meteorology modeling project funding by the TUBITAK Project 111Y319 and COST Action ES1004.