**Monitoring of atmospheric pollutants for prevention of adverse health events**

Autores: Daniellys Alejo Sánchez1, Vladimir Núñez Caraballo2, Mayra C. Morales Pérez1, Piet Van Espen3, Luis Enrique Hernández Santana1, Werner Jacobs4, Olivier Schalm4, Alain Martínez Laguadia1, Delvis García García1, Ary Rodríguez Alvarez1, Jorge B. de la Torre Lopez1.

Afiliaciones: 1Universidad Central de Las Villas/daniellysas@uclv.edu.cu/mmoralesp@uclv.edu.cu/luishs@uclv.edu.cu/amguardia@uclv.edu.cu,dggarcia@uclv.edu.cu 2Centro Provincial de Meteorología/vladimir.nunez@vcl.insmet.cu, 3University of Antwerp, 4Naval Academy of Antwerp

**Abstract** In this work nitrogen dioxide and tropospheric ozone have been monitored by means of passive samplers in a zone of Santa Clara city with a high influence on the emission of combustion gases. Correlations between atmospheric conditions and respiratory illnesses were obtained. Also, a methodology to the environmental technical diagnosis to fixed sources was developed to prevent critical episodes of air pollution and diminish adverse health effects. Finally, the use of sensors has been started to monitor atmospheric pollutants. Mathematical models explained that respiratory diseases were triggered by air pollution and climatic conditions with a 14 days lag. The industrial fixed sources were classified considering the wind direction and a method of air quality forecast was developed taking into account the emissions of industrial fixed sources. As the results show, the application of these mathematical models and the air quality forecast model using sensors as an alternative strategy economically viable, easy to operate, which prove real-time data of the pollutants concentrations simultaneously in different sites can be apply to prevent critical episodes of air quality.