CALIOPE system helps forecast air quality in Mexico City

A modelling system based on the CALIOPE system predicts the presence of pollutants in the atmosphere with 24 hours in advance and will help assess the impact of anti-pollution measures.

Barcelona Supercomputing Center (BSC) has collaborated with the Environment Secretariat of the Government of Mexico City (SEDEMA) to implement a system to predict air quality in the city and evaluate measures to reduce pollution levels.

The system was presented this week at a press conference that was attended by Marc Guevara, the BSC researcher in charge of the coordination and execution of the project. In his speech, he emphasised that “this new tool, together with the existing atmospheric monitoring network, will allow SEDEMA to manage air quality in a more comprehensive and complete way.” The presentation also highlighted the importance of high performance computing to organisations’ ability to carry out well the complex task of modelling air quality, especially when it comes to an operational and continuous service.

The project, which SEDEMA commissioned BSC to undertake, has focused on adapting the CALIOPE system to make predictions for the Mexican capital city. CALIOPE is the BSC air quality forecast system that predicts the presence of pollutants in the atmosphere for Spain and Europe.

Thanks to the new system, Aire CDMX, citizens of Mexico City have access to predictions of the presence of the main atmospheric pollutants (ozone, nitrogen dioxide, sulphur dioxide and airborne particles) 24 hours in advance, and in resolutions accurate to one square kilometre and to the hour.

This system, in addition to alerting users of the next peaks of pollution, will also be a useful tool to support

decision making related to improving air quality. The agreement between BSC and SEDEMA foresees the development of simulations to predict the effects on the city of the various measures that the Government may consider.

The data provided by this system will help to create knowledge bases to contribute to the development of emergency plans, to decision making and to emission reduction programmes. It will also make quantitative information on air pollution available to society, the health sector and environmental authorities.

The daily forecasts generated by the system can be viewed online at:
http://www.aire.cdmx.gob.mx/pronostico-aire/

They are also available on the app:
https://itunes.apple.com/mx/app/aire/id877636042?mt=8
https://play.google.com/store/apps/details?id=mx.gob.df.aire&hl=es_419

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Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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