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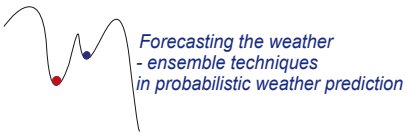

Analysis of meteorological data and CO_2 concentration in the city of Florence performed by high school students

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Science dissemination by researchers, although relatively rare, can be of great benefit for schools. Within the frame of the European project Carboschools+, the CNR-Institute of Biometeorology worked on science dissemination about greenhouse effect and climate change, relying mainly on practical experiences, also in relation to the territorial features. The Institute for Agriculture (ITAGR) in Florence was part of a network of 14 schools in Europe that have been equipped with a meteo station and Vaisala gas analyser to monitor automatically meteorological parameters and atmospheric carbon dioxide concentration.

The Institute for Agriculture is located close to the biggest green area of Florence. The aim of the activity was to investigate the relationship between variation of CO_2 and the meteorological variables during the year at ITAGR and comparing these data with those collected by another weather station managed by IBIMET and placed at the Ximeniano Observatory, in the centre of Florence. Then meteorological and CO_2 daily data were analysed by the students and mean values were compared. They produced graphs of meteorological and CO_2 concentration, analysing and commenting spatial and temporal variation at the ITAS site as well as those collected in the centre of Florence, considering also the traffic conditions. Additionally, students and researchers designed an experimental study to collect CO_2 data through horizontal and vertical transects at school, near a road, covering different land use: concrete surface, garden, forest cover. The aim was to quantify the CO_2 gradient: students were trained by researchers and performed outdoor measurements of CO_2 concentration.

Furthermore, due to the international character of the project, students had the chance to attend and present their activities to the international Carboschools+ Spring School.

This experience showed that learning through observation and inquiry stimulates students' interest in Science and is an effective method to approach them to meteorological analysis and raise the awareness on anthropogenic carbon emissions.