



SchoolCO2web: Growth of an international network of secondary schools observing atmospheric CO₂

H.A.J. Meijer (1), M.A. Keij (2), and M.J. Goedhart (2)

(1) University of Groningen, Centre for Isotope Research, Groningen, Netherlands (h.a.j.meijer@rug.nl), (2) University of Groningen, Institute for Didactics and Educational Development, Groningen, Netherlands

Three years ago, we initiated a project in which pupils from secondary schools get hand-on experience with real CO₂ measurements. Initially, three schools close to our university have been provided with a suitable CO₂ sensor, installed on the roof of the school building, combined with basic meteorological instruments and appropriate software. All data are stored quasi on-line in a central database. Newly, the project has been extended, and integrated into the larger, EU-funded Carboschools+ programme. The database is now on-line through the carboschools website (www.carboschools.org), and is open to everyone. A continuous record is being built up, in which for instance day-night cycles (depending on the current weather), and wind-directional effects are clearly visible. Depending on the site of the school (large city, small city, rural) different aspects of the carbon cycle and the anthropogenic influences become apparent. At the time of writing, seven schools are on-line, and the number is expected to at least double in the coming year.

At the schools, the sensor can eventually also be used to monitor CO₂ in a number of environments, such as close to a busy road, in woods, meadows etc. For these measurement campaigns the system is made hand-held using a portable data-logger and read-out system.

Educational material based on the schoolCO2web facilities is being developed by all partners participating in carboschools, and is shared wherever possible through the web platform.

Additional to the educational benefits, the network is potentially valuable for carbon cycle research as well. Provided the calibration of the instruments can be improved and maintained, this schoolCO2web will become the densest CO₂ observing network available, and will then be useful for e.g. validation of local scale models.

Such use of data for scientific purposes is also relevant for the educational benefits, as it makes the efforts of the schools more rewarding for staff and pupils, and guarantees the long-term financing of the projects.