The automated air sampler for the ICOS network

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An important aspect of the quality control for the in-situ measurements in the ICOS network is the comparison with results from discrete grab air samples taken at the stations analyzed at the central flask laboratory (ICOS-FCL). The analytical facilities at the central ICOS laboratories enable furthermore to make supplementary measurements (e.g. of O_2/N_2, $\delta^{13}C$ and $\Delta^{14}C$ of CO_2) in these flask samples that can provide supplementary information on the sample origin or sources of the greenhouse gases. To reach these different goals of flask sampling various sampling strategies for collecting flask samples can be appropriate.

An automated flask sampler has been designed for ICOS monitoring stations that offers various sampling modes under highly standardized conditions. The diverse options for sampling triggers and schemes cover a broad range of possible applications. All sampling and sensor data is automatically stored. The poster will give an overview of the sampler and its capabilities.