



CO and H₂ uptake and emissions by soil: variability in fluxes from long term soil chamber measurements

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In order to study the uptake and release of H₂ and CO by soil, we performed long term, high frequency measurements with an automatic soil chamber at two sites in the Netherlands (Cabauw – grassland, and Speuld – forest). The measurements were performed over different seasons and cover in total a cumulated interval of about one year. These measurements allow determining separately, for each species, the two distinct fluxes i.e. uptake and release, and investigating their temporal variability and dependencies on environmental variables.

We find that both uptake and release are present at all times (except for some extreme conditions when the soil was flooded and the uptake ceased) regardless of the direction of the net flux. The emissions are significant for both species and at Cabauw, there are times and places where emissions outweigh the soil uptake. For each species, the two fluxes have different behavior and dependence on external variables, which indicates that they have different origins.