

## **CARBON DIOXIDE EXCHANGE MEASUREMENTS USING AUTOMATED CHAMBERS AT PEENE RIVER VALLEY PEATLAND**

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The main goal of this study is estimation of CO<sub>2</sub> exchange between river valley surface and the atmosphere. The study area is Peene river valley is located in Mekleburg-Vorpommern province (Germany) approximately 20 km west of the town of Greifswald. The water level in the valley is controlled using irrigation system and its impact on CO<sub>2</sub> exchange can be studied during this experiment. The automated chamber systems are applied for these measurements. The accumulation of carbon dioxide under closed chamber is proportional to CO<sub>2</sub> exchange rate. A single measuring station is consisted of four automatically operated chambers 1 m<sup>3</sup> volume each. The increase of CO<sub>2</sub> concentration is measured within 8 minutes period with IR close-path gas analyzer. The ambient CO<sub>2</sub> concentration is measured within 32 minutes interval. Supporting meteorological measurements: air temperature, soil temperature, photosynthetically active radiation (PAR) are carried out simultaneously. The system is powered with solar panel charged standard car batteries. The collected values are stored initially in data-logger memory and daily obtained data are transferred with GSM module to computer. This system can be applied for CO<sub>2</sub> exchange studies over wetland surfaces. It can be applied successfully in stead of eddy covariance system in short vegetation conditions.