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Eddy covariance measurements of CO_2 and energy fluxes during the 2004 growing season from reed canary grass cultivation on a cutover peatland in eastern Finland

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Drainage of peatlands for peat extraction largely affects the biogeochemistry of peatlands. Peat harvesting sites have been known to be persistent sources of CO_2. It is hypothesized that the cultivation of bioenergy crops such as reed canary grass (*Phalaris arundinacea* L.) on cutover peatlands aids in offsetting the high CO_2 losses to the atmosphere. With this background, we are measuring CO_2 and energy exchange from a cutover peatland in eastern Finland cultivated with reed canary grass, employing the micrometeorological eddy covariance technique. The eddy covariance system consists of a CSAT3 sonic anemometer and an open path infrared CO_2/H_2O analyzer. The instruments are mounted at a height of 3.7 m above the ground and aligned at an angle of 225˚, as the predominant winds in the region are from southwest. Supporting measurements include air temperature, air relative humidity and pressure, net radiation and its components, photosynthetically active radiation, wind speed and direction, soil temperature profile, precipitation, soil water potential, soil moisture, water table level and snow depth. Post processing of eddy correlation data is performed using EdiRe software (developed at the University of Edinburgh) and Matlab. We present in this paper our preliminary results on micrometeorological conditions and CO_2 and energy flux patterns at the study site during the 2004 growing season.