

RR3. Soil respiration of a larch forest and its cutover in Eastern Siberia during the 2005 growing season

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Abstract

Soil respiration rates (CO₂ efflux) were measured continuously with automated closed/open chamber systems at a natural larch forest and an adjacent cutover site where larch trees were cut down in November 2000 near Yakutsk, Eastern Siberia during the growing season of 2005 for about 4 months from early May through mid-September to compare the temporal variation and environmental dependence of soil respiration between two different ecosystems. The automated system consisted of 5 chambers with a covering area of 0.0186 m², a data logger, an infrared CO₂ analyzer, an air pump, and some electric parts to switch the airflow between the analyzer and chamber. With the system, it took 30 min to make a series of the measurements of 5 chambers. Two positions were interchanged every 7–9 days, respectively, for 4 chambers out of 5 chambers to increase replicates; one chamber was fixed at one position. Thus, soil respiration was measured at 9 points in each site. Using a number of the measurements, we are investigating temporal variations in soil respiration and the dependence of soil respiration on soil temperature and moisture. We will show the comparison of the temporal variations and environmental dependence of soil respiration along with the seasonally cumulative soil CO₂ efflux, between the two sites.