

**Biodiversity of cyanobacteria and microalgae in freshwater and terrestrial habitats, Eastern Dronning Maud Land, Lützow-Holm Bay, Antarctica;
Does cyanobacterial support development of lake bottom communities by nitrogen fixation, and Construction of photosynthetic microorganisms diversity database
(60 Japan Antarctic Research Expedition - 2018/2019)**

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From November 28, 2018 to March 20, 2019 Josef Elster participated in JARE 60 (Japan Antarctic Research Expedition). Langhovde, Skallen, Skarvsnes, Innhovde, Ongul Island and Amundsen Bay – Mount Riiser-Larsen localities were visited and 173 (138 from freshwater, 29 from terrestrial and 6 from snow) field samples were collected for following taxonomical and ecophysiological analyses. High attention has been given to cyanobacterial samples in littoral and bottom of lakes. From five lakes bottom's samples (mixture of cyanobacteria and mosses) were collected: Bosatsu, Hotoke, Nyorai, Naga from Skarvsnes and Skallen nitrogen fixation rate together with cell's biovolume estimation and molecular diversity analyses were performed (Tomotake Wada project). In addition, the study focused on construct a diversity map database of photosynthetic microorganisms around Sôya coastal area was also conducted. Species composition and biomass were very different in each habitats. Chlorophyta, Streptophyta, Bacillariophyceae, and Cyanobacteria were observed (Hiroshi Koyama project). The diversity map database around Sôya coastal area will bring information about diversity and abundance of photosynthetic microorganisms. Such information will be used for long term ecological studies related with ingoing global climate and anthropogenic changes.