Challenges in establishing an ICOS Ecosystem Station

Marlene Schramm, Holger Lange, and Junbin Zhao
Norwegian Institute of Bioeconomy Research, Terrestrial Ecology, Norway (m.schramm@mailbox.org)

The measurement network Integrated Carbon Observation System (ICOS) is dedicated to the quantification of fluxes of CO$_2$, H$_2$O, N$_2$O and CH$_4$ at the boundary between vegetation surfaces and the lower atmosphere. The implementation of observations sites follows strict protocols and a challenging labelling process to ensure standardized intercomparable observations. We report on our experiences in attempting to establish the only Norwegian ICOS Ecosystem site thus far, NO-Hur, located in an old-growth spruce forest at Hurdal in Southeast Norway. NO-Hur is planned as a class 2 site, with the option to an upgrade to class 1 later. The instrumentation and sensors needed, the requirements for spatial homogeneity and a detailed analysis of a digital terrain model are presented. The current status of the tower construction, the preliminary measurements obtained with the existing ICOS-certified equipment at a test site, and the plans for integrating the measurements operationally into the network are shown.