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## **Inter-annual variability of evapotranspiration over a coniferous forest in Switzerland: 20 years of measurements**

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Forest ecosystems play a major role in the global cycles of carbon, water and energy. Evapotranspiration (ET), the sum of evaporation and vegetation transpiration, is a major component of the water cycle, and is strongly coupled with plants' physiological response to the environment. Here we present twenty years of evapotranspiration from the ICOS Class 1 Ecosystem Station candidate site Davos Seehornwald (CH-Dav), located in a sub-alpine coniferous evergreen forest in the Swiss Alps, measured using the eddy covariance method. The forest is located at 1639 m above sea level and is dominated by Norway spruce (Picea abies (1.) Karst), with a low number of European larch (Larix decidua Miller) interspersed. Water vapor exchange above the canopy, i.e. flux of H<sub>2</sub>O vapor, was first recorded in 1995 and continuous measurements are available since 1997. The dataset presented here is among the longest set of continuous measurements of ecosystem water vapor fluxes and therefore allows detailed analyses of the variability of water vapor fluxes over the past two decades, and potential trends in ecosystem functioning. Based on our observations we discuss the inter- and intra-annual variability in ET in response to long-term (aggregated) and short-term variability in the meteorological drivers, particularly during different phenological phases.