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ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

ENAC-SIE, SIE Project, Fall 2017	Start:	19/09/2017
4 ECTS credits	End:	22/12/2017 (approx.)

Title	**How much water can a vegetated soil evaporate?**
Supervisors	Dott. Paolo Benettin, Prof. Andrea Rinaldo
Objective	Estimating 15-min evapotranspiration fluxes using data from high-precision weighed lysimeters.
Abstract	Evapotranspiration (ET) is a crucial component of the water cycle, typically accounting for up to 50% of the annual water balance. Direct estimates of ET are difficult at the larger scales, but can be achieved at smaller experimental scales through high-precision lysimeters. High-frequency lysimeter data have been collected at EPFL campus during winter and spring 2016 and preliminary analyses have shown a number of interesting features including the vegetation "activation" in spring. Accurate and creative analyses are needed to estimate ET fluxes at high frequency and explore their temporal dynamics.
Task description	1. setup a routine to access and display the raw data (timeseries of a few millions elements) 2. estimate ET from the raw data 3. creative analysis of ET (estimates during day/night, differences among the vegetation regimes, dependence on temperature and solar radiation, etc...)
Required skills	• basic notions of hydrology • strong programming skills (e.g. Matlab, R or Python)
Location	EPFL campus, Lausanne (CH)
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