Umweltanalytische
Produkte GmbH

Data Logger, Sensors and Software Solutions:

PROSALOG

PROfessional SApflow dataLOGger

Including integrated Constant Current Source to run three Sapflow Sensors type CTD = Constant Thermal Dissipation.

NEW: NTG (Natural Temperature Gradient) correction using CHD (Cyclic Heat Dissipation) Method.

Background *:

Natural temperature gradient (NTG) can create a significant bias in thermal sap flow measurements, particularly in dry environments with sparse vegetation.

To resolve that problem, a novel correction method called cyclic heat dissipation (CHD) has been proposed by M. Lubzynski. The CHD method is based on cyclic, switching ON/OFF power scheme measurements and a three-exponential model, extrapolating measured signals to steady-state thermal equilibrium. The extrapolated signal OFF represents NTG, whereas the extrapolated signal ON represents a standard thermal dissipation probe (TDP) signal, biased by NTG. Therefore, subtraction of the OFF signal from the ON signal allows defining the unbiased TDP signal.

Figure 1. A sample of three transients, OFF–ON–OFF, each represented by a different color and each extrapolated to thermal steady state equilibrium (dashed line); SR, signal residual, i.e., the difference between the last measured ΔT and the extrapolated ΔT; $\Delta T_{ON_i}^E$, extrapolated ON transient; $\Delta T_{off_{i-1}}^E$ and $\Delta T_{off_{i+1}}^E$, extrapolated OFF transients; t, time.

* http://treephys.oxfordjournals.org/at Universiteit Twente on May 24, 2012 - Tree Physiology 00, 1–19   doi:10.1093/treephys/tps030
Maciek W. Lubczynski, Diana Chavarro-Rincon and Jean Roy
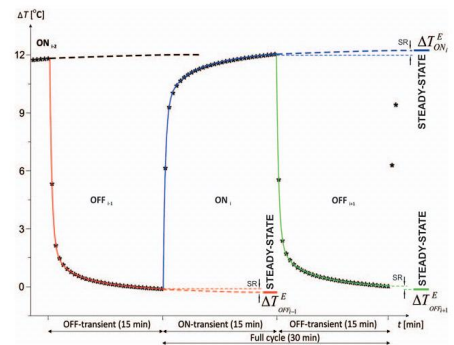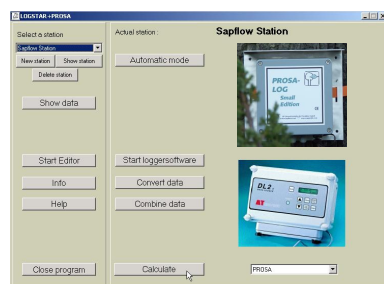ITC Faculty, Department of Water Resources, University of Twente, PO Box 6, 7500 AA Enschede, The Netherlands

New PROSA - Software Release 3.1 or higher

Run this version to evaluate CHD-Datasets as well as standard continuously measured CTD-sensors.

Incl. Logstar (Logger Stations Archiv) to organize data from more then one datalogger station

Sapflow Sensors CTD technique

with customized specification available standard setup H=20mm Heating zone (0.2 W)

Accessories like radiation protection shield or installation tool kits are available

www.upgmbh.com   www.upgmbh-logstar.de