



## **Estimating long-term trends in actual evapotranspiration with help of lysimeter data**

Harrie-Jan Hendricks Franssen, Anne-Katrin Röseler, Thomas Pütz, and Harry Vereecken

Forschungszentrum Jülich GmbH, Agrosphere (IBG-3), Jülich, Germany (h.hendricks-franssen@fz-juelich.de)

Actual evapotranspiration is affected by climate change and changes can be predicted by regional and global circulation models. However, these predictions are affected by large uncertainties for example related to the representation of the evapotranspiration process. Evaluation of model simulations with measurements of actual evapotranspiration is important. Unfortunately, only at a limited number of sites actual evapotranspiration is measured by the eddy covariance (EC) method and time series tend to be shorter than 20 years. In addition, the EC-measurements are affected by the energy balance closure problem. Therefore it is important to explore additional sources of evapotranspiration data. Lysimeter data offer longer and more precise time series of actual evapotranspiration. We will show some studies where lysimeter and EC-measurements are compared and show that in spite of the small spatial scale of the lysimeter measurements, these contain important information on large scale temporal changes of actual evapotranspiration.