UNIVERSITÄT BAYREUTH

Bayceer
Bayreuther Zentrum für Ökologie und Umweltforschung

Sommersemester / ***Summer Term 2016***

Do. /*Thu.* 12 st
Gebäude/*Building*
GEO
Hörsaal/*Lecture hall*
H6

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung
Lecture series in Ecology and Environmental Research

Donnerstag 09.06.2016, 12:00 Uhr, H6

Anschließend Postkolloquium mit Mittagsimbiss im Foyer H6

Dr. Julian Klaus

Catchment and Eco-Hydrology Research Group,
Luxembourg Institute of Science and Technology

Stable Isotopes in Hydrology: Progress in concepts and process understanding

Stable isotopes of the water molecule (^{18}O, ^{2}H) are commonly used in various hydrological applications. They are a powerful tool to better understand the movement of water from their source in the ocean until they leave catchments via streamflow and evapotranspiration. In recent years, significant progress was made in measuring techniques and in the fundamental theory of stable isotope application in hydrology. This presentation will show research that employed stable isotopes in precipitation and streamflow studies. At first, a new high-frequency data set of stable isotopes in precipitation will be presented, including measurement techniques and the influence of hydro-meteorological parameters on long term and short term variations. Furthermore, new theoretical concepts to investigate water flowpaths and catchment transit times using stable isotopes will be outlined. One approach relies on the relationship of $\delta^{2}H$ to $\delta^{18}O$ (via the evaporation water line) in different components of the water cycle that eventually allows a better conceptual understanding of water flowpaths. The second approach is a novel semi-parametric model that is used to calculate $\delta^{18}O$ of streamwater and eventually infer the catchment transit time and transit time distribution. These two approaches are applied in fundamentally different landscapes. Based on these applications, we can conclude that different physiographic catchment characteristics require partly different methodological stable isotope approaches to decipher catchment function.

Die Vortragsreihe ist eine interdisziplinäre Plattform zur Information und Diskussion für Studierende, Forschende und Lehrende

Gäste sind herzlich willkommen

The lecture series serves as an inter-disciplinary platform for students, junior and senior scientists.

Guests are cordially invited!

Kurzfassungen und weitere Infos / *Abstracts and further information*:
www.bayceer.uni-bayreuth.de/kolloquium/

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