

Wintersemester 2008/2009

Gebäude GEO I  
Hörsaal H6

## BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung

Donnerstag 22.01.2009, 17:00 st Uhr, H6

Anschließend Postkolloquium mit Bier und Brezeln im Foyer H6

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## Analysis of Factors Affecting the Spatio-Temporal Patterns of Thermal Exchange Fluxes between Streams and Groundwater

Thermal stream loadings from both natural and anthropogenic sources have significant relevance with respect to ecosystem health and water resources management, particularly in the context of future climate change. In recent years, there has been an increase in field-based research directed towards characterizing thermal energy transport exchange processes that occur at the surface water/groundwater interface of streams. In spite of this effort, relatively little work has been performed to simulate these exchanges and elucidate their roles in mediating surface water temperatures and to simultaneously take into account all the pertinent hydrological, meteorological and surface/variably-saturated subsurface processes.

To address this issue, HydroGeoSphere, a fully-integrated surface/subsurface flow and transport model, was enhanced to include fully-integrated thermal energy transport. HydroGeoSphere can simulate water flow, evapotranspiration, and advective-dispersive heat and solute transport over the 2D land surface and in the 3D subsurface under variably-saturated conditions. The model should explore the physical, geomorphological and climatic factors controlling the spatial and temporal patterns of the thermal energy exchange fluxes between the stream and the underlying groundwater system, and it can be used to provide quantitative guidance towards establishing the conditions needed to maintain conditions for a healthy ecosystem.

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

Gäste sind herzlich willkommen