

Wintersemester 2008/2009

Gebäude GEO I
Hörsaal H6

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung**Donnerstag 30.10.2008, 17:00 st Uhr, H6****Anschließend Postkolloquium mit Bier und Brezel im Foyer H6**

Dr. Martin Wilmking

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Recent rapid warming and the boreal forest - Ecological challenges to paleoclimatic reconstructions

High latitude regions have been and will be most heavily impacted by climate warming. Recent rapid warming already has altered ecological relationships in the boreal forest and a widespread “browning” or reversal of the former positive relationship with warm temperatures has been reported. This change in relationship between tree growth and climate is not only affecting growth performance and carbon uptake, but on a different level is challenging the field of dendroclimatology, where tree rings are used for climate reconstructions.

The use of tree rings as climate proxy relies on a /constant/ relationship between tree growth and climate factors, the “Uniformitarian principle”. Recent evidences, especially from the boreal region, suggest challenges to this interpretation of the uniformitarian principle, such as plastic relationships between climate driver and ring width or isotopic composition, temperature thresholds controlling growth, age dependency of the climate-growth relationships or diverging long term growth trends.

So far there is only one hypothesis able to explain most (or all) of these phenomena – the adaptation of tree species to a rapidly changing environment. While this process probably does not surprise ecologists, it does challenge the methodology of a field which has provided most of the millennial climate reconstructions, covering medieval warm period and little ice age, used today in the international climate assessments.

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