

Wintersemester 2009/2010

Gebäude GEO I  
Hörsaal H6

## BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung

Donnerstag 04.02.2010, 16:15 Uhr, H6

Anschließend Postkolloquium mit Bier und Brezeln im Foyer H6

### Dr. Frank Keppler

Max-Planck-Institut für Chemie in Mainz, Abt.  
Atmosphärenchemie

## Produzieren Pflanzen tatsächlich Methan?

Almost four years ago, Keppler et al. (2006) reported from laboratory experiments that living plants, plant litter and the structural plant component pectin emit  $\text{CH}_4$  to the atmosphere under aerobic conditions. These observations caused considerable controversy amongst the scientific community and the general public because of their far-reaching implications. This was mainly for two reasons: firstly, it is generally accepted knowledge that the reduced compound  $\text{CH}_4$  can only be produced naturally from organic matter by methanogens in the absence of oxygen, or at high temperatures, e.g. in biomass burning. Secondly, the first extrapolations from laboratory measurements to the global scale indicated that these emissions could constitute a substantial fraction of the total global emissions of  $\text{CH}_4$ . After publication of the findings of Keppler et al., their extrapolation procedure was severely criticised, and other up-scaling calculations suggested a lower, though still potentially significant plant source of  $\text{CH}_4$  emissions. However, it became clear, that without further insight into the mechanism of the 'aerobic' production of  $\text{CH}_4$ , any up-scaling approach would have considerable uncertainties and thus be of questionable value. Therefore, the principle scientific questions are now: if, by how much, and by what mechanisms is  $\text{CH}_4$  emitted from dead plant matter and living vegetation.. An overview of the current state of the art and the most recent findings will be given in this presentation.

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