

---

Einladung zum  
**WIENER PHYSIKALISCHEN KOLLOQUIUM**  
[www.univie.ac.at/wpk](http://www.univie.ac.at/wpk)

---

**Rapid Climate Change in the Earth System:  
Past, Present, Future**

**Lonnie G. Thompson**

Department of Geological Sciences and Byrd Polar Research Center  
Ohio State University, Columbus, Ohio, USA

Unprecedented global changes of the 20<sup>th</sup> Century have heightened awareness of human vulnerability to potential climate changes in the next millennium. Half of the Earth's surface area lies between 30° N and 30° S and supports 70 percent of the population. Thus variations in the occurrence and intensity of the El Niño-Southern Oscillation and monsoons are of significance to humanity. Here meteorological records are available from selected high altitude, low- and mid-latitude ice caps. The studies described here were undertaken as part of a long-term program to acquire the global-scale, high resolution climatic and environmental history essential to better understand the linkages between the low and high latitudes.

This lecture explores the recent contributions of records from ice caps in Asia, South America and Africa to gain better understanding of tropical climate and the global significance of the tropical hydrological cycle. These ice core records provide a long-term perspective essential to distinguish natural variation in the climate system from anthropogenic influences superimposed during the last century. These new tropical records raise additional questions about our understanding of the role of the tropics in global climate change while documenting major disruptions in tropical climate such as the drought ~4000 years ago coincident with the "First Dark Age", and the 5.2 ka event. The latter records a wide spread abrupt cold-wet event 5200 years ago which links tropical Africa to tropical South America where a 5200 year old plant was exposed in 2002 by the retreating ice as well as the Tyrolean Iceman from the Alps. Unfortunately, as a result of recent warming, all known tropical glaciers and ice caps are retreating and soon will no longer continue to preserve viable paleoclimatic records.

**Montag, 19. Mai 2003, 17:30 Uhr**  
(ab 17:00 Uhr Kaffee)

Großer Hörsaal des Instituts für Experimentalphysik der Universität Wien  
Strudlhofgasse 4/1. Stock, A-1090 Wien

---

Universität Wien

ÖPG

TU Wien

---

Unterstützt vom Kulturstadtrat der Stadt Wien