

GEOGRAPHISCHES KOLLOQUIUM / LECTURE SERIES

Donnerstag, 13.07.2017, 16 Uhr c.t., Senatssaal - 7. Stock Geogr. Institut

PD DR. KATHRYN FITZSIMMONS

(MPIC Mainz)

"At the heart of Eurasia, but on the edge of everything: What Central Asian loess can tell us about shifts in climate subsystems"

Central Asia lies at the core of the largest and most populous continent on Earth - Eurasia - however we know little about its role in global climate dynamics past and present. This is largely because we have yet to recognise the full potential of Eurasia's most widespread, yet most valuable, archive for past environmental change: wind-blown dust (loess). Long sequences of primary loess and buried soils blanketing Eurasia reflect unambiguous responses to past climatic change over at least the last million years. Central Asia and its extensive loess deposits, in particular, are notably sensitive to the interplay between the powerful climatic drivers of the north Atlantic westerlies, the polar front and the Asian monsoon. The Tibetan Plateau to the south drives the modern monsoon due to its orographic influence on precipitation regimes. Ongoing mountain uplift has likewise affected the climate of the central Asian basins to the north through time, driving aridification and continentality. Emerging data from the Central Asian loess suggest that past climates may not only have been subject to spatial migration, expansion and contraction of the major climate subsystems, but also the compression and the blockage of system teleconnections. These hypotheses set the scene for targeted research based on quantitative palaeoclimate reconstruction from loess records in the heart of Eurasia. I will discuss some of the methods we are developing to better understand the missing continental link in global climate dynamics.

Einführung und Diskussionsleitung: Prof. Dr. Andreas Vött