



Invitation

Please be invited to a research talk by Ramzi Touchan on

Dendroclimatology in the Mediterranean Basin

Time: 10:00-11:30 on the 20th of August 2019

Location: GFZ Potsdam, Telegrafenberg, House H, Seminar room 1

Abstract

The Mediterranean Basin has suffered from severe droughts in the past several decades. Such events can have drastic social and economic impacts, particularly in North Africa (NA) and eastern Mediterranean (EM) where population is increasing rapidly and water supplies are extremely limited. The Intergovernmental Panel on Climate Change (IPCC) projects that the Mediterranean region will likely experience a decrease in water resources due to climate change, and the region has been identified as one of the global “hotspots of climate change”. Drought-sensitive tree-ring records are a valuable resource for extending knowledge of hydroclimatic variability both in space and time. Here we will discuss the first large scale systematic tree-ring sampling in NA and EM. One- hundred-fifty chronologies have been developed. We conducted a site-by-site correlation analysis of each residual ring-width chronology from the EM against local gridded climate data to identify the appropriate hydroclimatic season for developing point-to-point precipitation and drought field reconstruction. The warm season May-July emerges as broadly important to tree-ring chronologies in the EM, whereas parts of NA also have a winter signal. We use a 'Point-to-Point' principal components regression approach to develop climate field reconstructions of drought and precipitation variability in the NA and EM from the tree-ring network. Our results indicate that major droughts and drying trends over the last several decades are not coherent across the Mediterranean basin but are, instead, highly localized in the western Mediterranean (32°N-42°N, 10°W-0°), Greece (36°N-43°N, 19°E-26°), and the Levant region (30°N-37°N, 33°E-40°E).

Ramzi Touchan

Ramzi is Research Professor at the Laboratory of Tree-Ring Research and Professor of Watershed Management and Ecohydrology at the University of Arizona. His research integrates dendrochronology into natural and water resources management in the Middle East, Eastern Mediterranean, and North Africa. Ramzi is visiting the GFZ Potsdam and DAI Berlin as part of ongoing research co-operations within the DFG Priority Program 2143 “Entangled Africa”.

For more information please contact Ingo Heinrich (heinrich@gfz-potsdam.de).

PD Dr Ingo Heinrich
Coordinator TERENO Northeast
Helmholtz Centre Potsdam
GFZ German Research Centre for Geosciences
Telegrafenberg, 14473 Potsdam