



What is the role of centennial phenological time series to describe global warming in independent records?

T. Rutishauser (1), K. Bolmgren (2), J. Luterbacher (3), E. R. Wahl (4), and D. M. Anderson (4)

(1) University of Bern, Oeschger Centre for Climate Change Research and Institute of Geography, Bern, Switzerland (rutis@giub.unibe.ch), (2) Swedish National Phenology Network, Swedish University of Agricultural Sciences, Asa, Sweden, (3) Department of Geography, Climatology, Climate Dynamics and Climate Change, Justus Liebig University, Giessen, Germany, (4) NOAA's National Climatic Data Center, Boulder, Colorado, USA

The thermometer-based global surface temperature time series (GST) commands a prominent role in the evidence for global warming, yet this record has considerable uncertainty. An independent record with better geographic coverage would be valuable in understanding recent change in the context of natural variability. We compiled the Paleo Index (PI) from 173 temperature-sensitive proxy time series (corals, ice cores, speleothems, lake and ocean sediments, historical documents and phenological records; Anderson et al., GRL doi:10.1029/2012GL054271). Each series was normalized to produce index values of change relative to a 1901–2000 base period; the index values were then averaged. From 1880 to 1995, the index trends significantly upward, similar to the GST. Smaller-scale aspects of the GST including two warming trends and a warm interval during the 1940s are also observed in the PI. The PI extends to 1730 with 67 records. In this presentation we focus on the contribution of plant phenological time series and their impact on the record. Moreover we discuss the findings in comparison with continental and regional European indices.