

Popa, I. & Kern, Z. (2008): Long-term summer temperature reconstruction inferred from tree-ring records from the Eastern Carpathians. Climate Dynamics. doi 10.1007/s00382-008-0439-x

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First author: Popa, Ionel

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Abstract

Long-term summer temperature reconstruction inferred from tree-ring records from the Eastern Carpathians

Ionel Popa - Zoltán Kern

Abstract:

The first 1,000 year long Carpathian tree-ring width chronology was established based on living and subfossil stone pine (*Pinus cembra* L.) samples from an upper timberline forest located in Calimani Mts. (Romania). Tree-ring data were standardized using the regional curve standardization method in order to preserve the low and medium frequency climate signals. The de-trended index strongly correlates with summer mean temperature both at annual and decadal scales. The Calimani summer mean temperature anomalies were reconstructed for the period AD 1163-2005 applying the rescaling method. This new climate proxy from the Carpathians shows similar fluctuations to other North Hemispheric temperature reconstructions, but with periods of distinct differences. The fingerprint of Little Ice Age in the Calimani area is visible between AD 1370 and 1630 followed by lagged cold decades in AD 1820 and 1840. The recent warming is evident only after the 1980s in our reconstruction.

[dendrology, tree ring, dendrocronology](#)

[climate: climate change](#)

Notes

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Pinus cembra L., Dendroclimatology, Paleoclimate proxy, Timberline, Eastern Europe

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