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Adjustment of the tree-ring response of Juniperus thurifera to climate in the Western Mediterranean region

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Juniperus thurifera L. is a long-lived conifer tree endemic to western Mediterranean region. It is well adapted to continental Mediterranean weather conditions such as negative winter temperatures or summer drought and is capable to maintain the photosynthetic activity all year round, making it a suitable species to study tree-ring sensitivity to climate change.
In this work we have used tree-ring width data of J. thurifera trees from six stands located in northern Spain (Soria, Barrios de Luna and Desert of Monegros) and High Atlas in Morocco (Armd, Oukaimeden and Ourika) and correlated with climatic information (temperature and precipitation) from the Climate Research Unity (CRU) database. We have evaluated separately the growth patterns and climatic response of the populations from Spain and Morocco as they showed distinct seasonal dependence to temperature and precipitation. Afterwards, according to the length of both databases (ring-width and surface climate variables), we evaluated the role played by the climatic variables on the species growth pattern through time. We observed an increase of growth sensitivity to summer drought in Spain, whereas such sensitivity was not verify in Morocco"