



The impact of global change on Bosnian pine (*P. heldreichii* and *P. heldreichii* var. *leucodermis*) from SE-Europe as inferred from stable carbon and oxygen isotopes

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Pinus heldreichii (var. *leucodermis*) is widespread in the Balkan peninsula and has some scattered and isolated populations in Southern Italy (Todaro et al. 2007). We selected two sites at the western (Italy) and the eastern (Bulgaria) limit of its geographical range distribution, respectively. The Italian site (39°56'N, 16°12'E) is located at the timberline (2054m a.s.l.) of Monte Pollino in the Serra di Crispo mountain range. The Bulgarian study site (41°46'N, 23°25'E) is situated slightly below the timberline (1900m a.s.l.) of the northern Pirin mountain range, near Mount Vihren. Both sites are characterized by shallow rocky soil and carbonate bedrock (limestone and marble). The Italian site is influenced by humid Mediterranean climate with mean annual temperature at 4°C and 1500mm mean annual precipitation. In contrast, the Bulgarian site is located at in the transition zone between Mediterranean and temperate climate with a mean annual temperature of 1°C and mean annual precipitation of ca. 800mm. We have compared the site chronologies of $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ between AD1600 and AD2003. We will present and discuss common variance in year-to-year variations and long-term variations, as well as response to increasing atmospheric CO_2 concentration and climate.