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Reconstruction of average annual temperature series from A.D. 1480-2008 using tree-ring data of Baima Snow Mountains

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Abstract: The study aims to reconstruct the average annual temperature series since 1480 in Baima Snow Mountains. The increment core of Sabina saltuaria (Rehd. et Wils) Cheng et W. T. Wang and Subalpine larch (Larix lyallii Parl.) were sampled near the alpine timberline in Baima Snow Mountains Nature Reserve in June, 2009, the tree ring width standard chronology was built, and the relationships between the tree ring index of the standard chronology and the meteorology data of the nearest meteorology stations were analyzed. It is found that the tree ring index closely relates to the average annual temperature, with a correlative coefficient of 0.536. The linear regression function was used to reconstruct the average annual temperature of the researched area. Statistics indicates that the reconstruction is dependable.

Key words: tree-ring, average annual temperature, reconstruction, tree line, Sabina saltuaria (Rehd. et Wils) Cheng et W. T. Wang and Subalpine larch (Larix lyallii Parl.)