

Interactive comment on “Fire history in western Patagonia from paired tree-ring fire-scar and charcoal records” by A. Holz et al.

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General comments

The manuscript presented by Holz et al. is an important contribution to the fire history research in southern South America since it provides a unique study focusing both on sedimentary charcoal and fire scar records. I think this paper is worth to be published in CP, but the authors may consider the comments listed below.

In the Introduction (P 3207- line 20), the authors point out “we used paired records of charcoal and tree-ring fire histories to examine variability in the Holocene wildfire activity at. . .” However, information based on both proxies is available just for the period ca 1500-2000 AD. Besides, a single sedimentary charcoal record spans the last 11000

cal yrs in one site whereas the other records in the other two sites encompasses ca. 4000 cal yrs. This should be clarified and explained in detail in the objectives.

The section “Fire reconstruction and climate” presents some discrepancies that need to be clarified as was mentioned by referee V. Markgraf. It could be interesting to improve this section by comparing your results with some sedimentary charcoal studies and palaeoclimatic inferences mentioned in the Introduction (e.g. Huber et al., 2004; Whitlock et al., 2006; Markgraf et al., 2007), and then to discuss the possible large-scale climate controls on regional fire activity based on other proxies reconstructions.

Specific comments

There are several references about previous fire history reconstructions in South America and some other aspects that need a revision. P 3207- line 12: “previous charcoal and tree-ring fire histories” are presented, however tree-ring studies are not cited from lines 12 to 16. The geographical location from some sites is confusing or not exact (for example, P 3206 line 16-17, are the sites westward Andes?; P 3206 –line 8, is 39° south-central Chile?). I suggest referring to the geographic position of the sites cited as eastward or westward Andes specifying the latitude-degree location. Please, check carefully the citations with the References list. It could be interesting to clarify which type of peatland the sampling sites are (P3228, line 9-11). The term bog is note equally to “mallin”. A bog is classically defined as a peatland located in an area higher than their surroundings which is fed just by precipitation and characterized by the accumulation of organic matter (peat). The term “mallin” is generally used in South America to indicate wetland ecosystems dominated by grasses or sedges and located on landscape depressions associated to surface or ground water. The “mallin” not always imply peat formation and accumulation.

Details

P 3211-line 14 to 16, Table 1 shows sample site characteristics and the period used for smoothing fire record, not the number of cross-sections or fire-scares samples per

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site. P 3213-line 22, P 3214-line 6, 11: to replace mallin with peat as is described in Figure 2 caption. Figure 1 caption: to replace “Map of Patagonia” with “Map of study area”. In the inset map of SSA, there is a black cross not a white circle.

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