

Sebastian Luening - Interactive comment

I enjoyed studying this very interesting study. I am particularly interested in the climate of the past 1000 years and noticed the dry phase that is documented in the dataset for the Medieval Climate Anomaly (MCA) by the low abundance of *Leptocythere* which serves as proxy for increased fluvial discharge. The MCA dry phase at this location fits well with other studies from the Mediterranean. See yellow dots here: <http://t1p.de/mwp>. It might be worth adding the MCA observation to the text, as the Little Ice Age is already mentioned as wet phase. Figure 8 is a key figure and needs a better and more detailed figure caption. Increased fluvial discharge (*Leptocythere* peaks) are marked by 'hatched' (not 'dashed') patterns.

Did I understand this correctly? In general it would be great if a summary figure could be shown where the key climatic findings are shown with the y-axis being time in years BP.

Thank you for your comment on the Medieval Climate Anomaly. We added a paragraph in the discussion part of our paper describing the signature of the MCA at our studied site.

*“Conversely, a strong decrease in *Leptocythere* is observed from 120 to 80 cm (Fig. 8). It suggests dryer conditions during this interval which corresponds to the Medieval Climate Anomaly (ca. 950-1250 AD). In the Northern Hemisphere, the MCA is generally described as a warm period characterized by intense dryness. In the Mediterranean, several studies highlighted dryer conditions during this event (e.g. Wassenburg et al., 2013; Martinez-Ruiz et al., 2015; Bassetti et al., 2016). The same signature is also observed in the Alps and the Rhone watershed, with periods of low lake level and low flood frequency, respectively (e.g. Magny, 2004; Wilhelm et al., 2016). Thus, the hypothesis of increased drought at the studied site during the MCA fits well with regional and local observation.”*

For better understanding, we also detailed the figure caption of figure 8 and changed the term “dashed” to “hatched”

*“Figure 8: Cumulative percentages of taxa composing the defined ostracod clusters along core RHSKS55. Correlations with seismic units are shown on the left side of the figure. Holocene Cold Relapses are also indicated on the y-axis. Periods of increased fluvial discharge are highlighted by peaks in *Leptocythere*. These periods of intensified runoffs correlate to the 2.8 ka event (CR4) and the LIA (CR6). Two periods of regional climate deterioration are also observed at 1.3 and 1.1 ka cal. BP. Conversely, the Migration Period*

Cooling (CR5) and the Medieval Climate Anomaly (MCA) corresponds to period of increased dryness.”