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Interactive comment on “The Mediterranean is getting saltier” by M. Borghini et al.

M. Borghini et al.

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Received and published: 20 May 2014

Thank you for your interest in our manuscript in which we focus on the processes causing long-term increases in deep water salinity and temperature in the western Mediterranean. We have indeed discussed the role of the Levantine Intermediate Water (LIW) in causing these changes, we show that the LIW has increased in salinity and temperature over long time scales and we conclude that the LIW is the primary cause of increasing salinity and temperature in the deep water of the western Mediterranean Sea, both in providing the stratification conducive to salt finger processes and in preconditioning the western Mediterranean for deep water formation. The role of LIW in preconditioning is stressed by Gacic et al (2013).

We now refer to the Gacic et al (2013) paper at the end of the Introduction in the following sentences: "Gacic et al. (2013) argued that oscillations in the salinity of LIW

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entering the western Mediterranean through the Sicily Channel are caused by bimodal oscillations in the circulation of the eastern Mediterranean with a time scale of order 10 years and high salinity LIW directly results in deep water formation events in the Gulf of Lions about 15 years later causing jumps in deep salinity and temperature of the western Mediterranean. Here we emphasise the long-term increases in salinity and temperature of the deep western Mediterranean associated with salt finger processes as well as the jumps in salinity and temperature associated with deep water formation events."

Interactive comment on Ocean Sci. Discuss., 11, 735, 2014.

OSD

11, C379–C380, 2014

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