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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Annual flood sensitivities to El Niño Southern Oscillation at the global scale" *by* P. J. Ward et al.

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Very interesting paper. I was especially surprised about the stronger ENSO signal in general in (log of) Qmax compared to Qannual. In my current region of study (Central America) there is not much information regarding Qmax because daily streamflow data are scarce or not available and there are only a few studies that have calibrated hydrological models in the region (our own study Hidalgo et al. 2013, Journal of Hydrology is one example) to produce daily estimates of streamflow for the region. Even so, in Hidalgo et al. (2013) it was concluded that the hydrological model showed poor calibration in the Caribbean coast of Central America, due in part to the lack of hydrological observations for calibration and good meteorological data in certain parts of

that subregion. The ENSO signal in annual precipitation in Central America is more consistent in the Pacific slope and is positively correlated with the SOI (consistent with the sign of Fig. A3); however, in the Caribbean slope such signal is highly variable and in some cases of the opposite sign. Such relationships, caused by the interaction of the complex topography with atmospheric circulations in the isthmus that produces many micro-climates, of course cannot be captured in the maps of the present study due to the limitations in the resolution, but suggest the opportunity for similar studies to determine regional characteristics with more detail using hydrological models.

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