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## ***Interactive comment on “Madagascar corals reveal Pacific multidecadal modulation of rainfall since 1708” by C. A. Grove et al.***

**C. A. Grove et al.**

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Received and published: 23 July 2012

### Response to editor comment

We are confident that we can address the reviewer comments and will resubmit a fully revised version of the manuscript. In accordance with the major concerns, we now provide a table indicating the significant correlations between coral records, as well as a comparison with other PDO reconstructions, rather than just a single record. Further, we cite two new papers that have been accepted for publication, highlighting the coral proxy link to regional hydrology (rainfall, modelled river discharge and sediment yield). See full citations below (Grove et al., 2012; Maina et al., 2012).

With regards to the editorial comment; there is indeed a significant 50-70 year fre-

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quency in the coral records. However, this may not have been clear in the previous single spectrum analysis (SSA) plots, as the x-axis was on a log scale. For the revised version of the manuscript we replace the log scale with a scale indicating the periodicity of years to highlight the significant 50-70 year frequency band, making it easier for the reader to identify. We also provide greater detail in describing this frequency band, graphically and in the text, as well as the interdecadal frequency band (20-30 years) associated with the Interdecadal Pacific Oscillation (IPO).

## References

Grove, C. A., Zinke, J., Scheufens, T., Maina, J., Epping, E., Boer, W., Randriamanantsoa, B., and Brummer, G.-J. A.: Spatial linkages between coral proxies of terrestrial runoff across a large embayment in Madagascar, *Biogeosci. Discuss.*, doi:10.5194/bgd-9-3099-2012, 2012 (accepted for publication in *Biogeosciences*).

Maina, J., de Moel, H., Vermaat, J. E., Bruggemann, H., Guillaume, M. M. M., Grove, C. A., Madin, J. S., Mertz-Kraus, R., and Zinke, J.: Linking coral river runoff proxies with climate variability, hydrology and land-use in Madagascar catchments, *Mar. Pollut. Bull.*, doi:10.1016/j.marpolbul.2012.06.027, 2012 (accepted for publication).

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