

Interactive comment on “Meteorological context of the onset and end of the rainy season in Central Amazonia during the 2014–15 Go-Amazon Experiment” by Jose A. Marengo et al.

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This should be accepted (with little revision) because it is a very interesting theme. This research has great impact, since the determination of the dry and rainy season of the Amazon is important not only locally but for the distribution of humidity in the rest of the

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South American continent. Studies with high frequency data are highly desirable as they describe in detail the characteristics of the region. In this context, this work is able to encompass the local characteristics of the region, with data from the experiments Go Amazon and Rain Project and the large scale characteristics due to the ENSO phenomenon. In this study the authors suggest that the dry season experienced has impacts of the En Nino and the beginning of the rainy season may be related to the MJO. - How does the relationship between MJO and ENSO occur? A brief explanation of this relationship would contribute to a better understanding of the article. - It is known that different phases of the MJO influence the precipitation in South America in different seasons. What is the climatological influence of MJO in this region during the year, and how is it different from that found in this specific study?

Response:

Broadly speaking, the influence of the MJO on precipitation over the tropics occurs by eastward propagation of Rossby wave trains from the tropical Pacific Ocean (Muza et al. 2009). Previous observational and modeling studies generally indicated that MJO and ENSO has a decadal variation and seasonal dependence (Tang and Yu, 2008; Hendon et al. 2007), however, them has not been well identified due to nonlinear in nature. These studies also show significantly lagged correlations between MJO and ENSO indices.

Despite this, recently, Shimizu et al. (2016) examined the regional relationship between ENSO and MJO phases on climatological patterns of precipitation over South America. The results indicated that combined responses showed that precipitation is strongly influenced by the MJO phases rather than by ENSO conditions, especially during the austral summer. Then, our results corroborate with Shimizu et al. (2016) who observed highest percentages of days with active MJO occurred during El Niño and neutral years and an increase of precipitation.

References:

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Hendon, H. H., M. Wheeler, and C. Zhang (2007), Seasonal dependence of the MJO-ENSO Relationship, J. Clim., 20, 531 – 543.

Tang, Y., and B. Yu (2008), MJO and its relationship to ENSO, J. Geophys. Res., 113, D14106, doi:10.1029/2007JD009230.

Muza MN, Carvalho LMV, Jones C, Liebmann B (2009) Intraseasonal and interannual variability of extreme dry and wet events over Southeastern South America and Sub-tropical Atlantic during the Austral Summer. J Clim 22:1682–1699.

Shimizu, M.H. & Ambrizzi, T. Theor Appl Climatol (2016) 124: 291. doi:10.1007/s00704-015-1421-2. –

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/acp-2017-22/acp-2017-22-SC2-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2017-22, 2017.

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