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Hydrology and Earth System Sciences Discussions

Interactive comment on "On the sources of hydrological prediction uncertainty in the Amazon" *by* R. C. D. Paiva et al.

Anonymous Referee #1

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General comment:

This paper focuses on two main sources of hydrological predictions uncertainties: the initial conditions of the model and the meteorological forcings. Through an existing hindcast approach, the authors differ both spatially and temporally the sources of hydrological predictions uncertainties in the Amazon River basin. Moreover, surface water, soil moisture and groundwater are distinguished showing that initial conditions of surface water are the major source of hydrological uncertainty in this basin. It is also the case for groundwater in southeast. This type of study is very useful for the hydrological community and I think that some prospects for such work should be mentioned at the end of conclusion. The topic of this paper is in the scope of HESS, and rele-

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vant. Overall the paper is well written. Some technical corrections and suggestions for improvement are listed below.

Specific comments:

p. 3741, line 26: Recently an interesting modeling effort was introduced by Guimberteau & al. (2012) with new data sets of floodplains areas and precipitation: http://www.hydrol-earth-syst-sci.net/16/911/2012/hess-16-911-2012.html

p.3742, line 10: The work of Prigent & al. (2007) can be also cited: http://www.agu.org/pubs/crossref/2007/2006JD007847.shtml

p.3742, line 11 and p.3754, line 30: The date for Vinukollu et al. is not 2010 but 2011.

p.3743 and 3744: For easier reading in section 2.1., the reference to the Figure 1 in the text should be divided in Fig. 1a, Fig. 1b, etc. when the different approaches are described.

p.3745, line 1: "module described in (Paiva et al., 2011a)." = module described in Paiva et al. (2011a).

p.3745, line 8: Can you cite the sources of the discharge data used for the calibration? Same question (at line 9) for the validation of the model.

p.3745, line 7 to 12: Does it exist a reference paper for calibration and validation of the model? (Maybe Paiva & al. (2011b)?). It could be useful for the reader to see the reference in this section.

p.3746, lines 3 and 4: "in 6 sites located in the main tributaries of Amazon River basin" = in 6 sites located in the main tributaries of Amazon River basin (see Fig.2a)

p.3747 line 1: "In the Amazon main stem analyses shows that" = In the Amazon main stem, analysis show that

p.3758: for easier reading of figure 3 but also of the text in section 3.1., Figure 3 should

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be divided in two: Fig3a for discharge results and Fig3b for relative ensemble spread.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 3739, 2012.