

Interactive comment on “Climate change under a scenario near 1.5 deg;C of global warming: monsoon intensification, ocean warming and steric sea level rise” by J. Schewe et al.

Anonymous Referee #1

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General Comments

This paper explores the climate response of the new RCP (Representative Concentration Pathways) scenarios using a model of intermediate complexity (EMIC). The paper is well written and I recommend it be published. That said, I do have a number of mostly minor issues for the authors to consider.

A more major issue is the title. I think it is very misleading. All the RCPs are used. The highest and lowest in terms of radiative forcing naturally come under special focus. The title just focuses only on the lowest RCP. I recommend the title be changed to: Climate change in response to the new RCP scenarios: monsoon intensification, ocean

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warming and steric sea level rise

Specific Comments

1. Page 299, 4 lines down – At the same time, a review by 2015 – English is awkward.
2. Page 301 – The climate sensitivity and transient climate response of Climber 3 should be given here and compared to the AR4 AOGCMs. I note that the climate sensitivity is discussed in the last section but I think the reader needs to know where this model fits into the AR4 distribution much earlier in the paper.
3. Page 302, 5 lines down – Why use the observed temperature trend estimated by Broham et al.? The IPCC AR4 estimate is more widely accepted.
4. Page 302, 5-6 lines down – The sentence “The warming projected of the AOGCMs.” needs a reference.
5. Page 302, 10 lines down – 0.18C per decade – This needs a reference or a description of how the value was computed. What period? Linear trend?
6. Page 303, bottom, last 3 lines – More is needed. What variable(s?) in view?
7. Page 304, top PP – I am confused by the use of high, medium, low RCP in this discussion. Use the RCP labels (RCP8.5, RCP6, etc).
8. Page 304, 7 lines up – Southern Ocean outflow – Define.
9. Page 304, bottom – The SLR pattern should be compared to those published in Yin et al. 2010.

Yin, J, S Griffies, and RJ Stouffer, 2010: **Spatial variability of sea-level rise in 21st century projections**. *J Climate*, **23(17)**, doi:10.1175/2010JCLI3533.1.

10. Page 307 – Stouffer (2004) discusses many of the processes outlined here. It should be referenced.

Stouffer, R.J., 2004: **Time scales of climate response**. *J Climate*, **17(1)**, 209-217.

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