

## Formal AMS Peer Review of Chapter 4 (Tropics) of the Annual State of the Climate Report for 2007

The editor's responses (Howard Diamond) to each comment are noted in *bold italicized text* below each comment.

### REVIEWER 1

I have read all sections of Chapter 4. The chapter maintains the high standards achieved in recent reports, and presents an excellent overview. In answer to your specific questions, I think the Overview and the Sidebar article works well.

I have made below some specific comments. These in general are quite minor:

I. 7: Is it necessary to say that the IOP is a 'new section'?

*Response: The editor thought this was necessary to let people know that this was indeed a new section; that is in line with previous SOC editions in 2005 and 2006.*

I. 15, 16: Perhaps something like 'associated with' is more appropriate than 'which resulted from'.

*Response: Agreed and changed appropriately.*

I. 27, 28: I still have trouble with 'periodic' as applied to El Niño and La Niña. Perhaps 'quasi-periodic' is better.

*Response: Agreed and changed appropriately.*

II. 37, 57: The report should be consistent as to whether the ONI has units or not.

*Response: Agreed and changed appropriately.*

I. 77: Delete 'previous'. Also, it might be useful to have here a reference or two which explains how teleconnection patterns can extract energy more easily from the winter circulation.

*Response: Agreed and changed appropriately.*

I. 107: Can we have a reference for this statement?

*Response: Agreed and a new reference has been incorporated.*

I. 109: Perhaps replace 'seen by' by 'reflected in'?

*Response: Agreed and changed appropriately.*

I. 165: Has 'H' been defined? I presume this is the same as 'HTC'

*Response: Yes.*

I. 186: 'below-average'

*Response: Agreed and changed appropriately.*

II. 186-192: Because a numerical value of the vertical wind shear is given it should be made explicit how this is calculated. I presume it is the conventional definition of the magnitude of the difference between the 200 and 850 hPa vector winds.

*Response: Agreed and changed appropriately.*

II. 349, 356: Do we *really* need inches and feet?!

*Response: Agreed that such units are not required and changed appropriately.*

I. 374: While ‘significantly’ is a reasonable word to use here, some readers may associate the word with a statistical test. Perhaps ‘considerably’ (or something similar) would convey the same meaning without the rigid statistical connotation.

*Response: Agreed and changed appropriately.*

I. 417: Insert ‘the presence of’ before ‘La Niña’

*Response: Agreed and changed appropriately.*

I. 428: Delete second comma

*Response: Agreed and changed appropriately.*

I. 430: The introduction of CYC and MCYC seems unnecessary as these classes have already been given acronyms. There should be uniformity in the Chapter.

*Response: We had not abbreviated cyclones and major cyclones (endemic to Indian Ocean) earlier. Doing so at this point makes it uniform in the chapter.*

I. 580: Umlaut missing from Münnich

*Response: Agreed and changed appropriately.*

II. 612-613: It strikes me that this statement goes beyond the spirit of a State of the Climate report. Where is the proof (references, ...) for this assertion? Even the addition of a conditional (e.g., ‘probably’) would make me feel more comfortable.

*Response: Agreed and changed appropriately.*

I. 621: The Saji and Yamagata (2003) paper does not appear in the References. I presume the authors are referring to:

Saji, N. H., and T. Yamagata, 2003: Possible impacts of Indian Ocean Dipole mode events on global climate. *Climate Research*, **25**, 151-169.

*Response: Agreed and changed appropriately.*

II. 639-640 and 661-662: There is repetition here.

In a number of the references there is information (e.g., journal name, volume etc.) missing. Among those I noticed were the references to the following papers:

Bell

Goldenberg ( x 2)

Juaregui

*Response: Agreed and changed appropriately.*

## **REVIEWER 2**

I've had a look at the Tropics chapter. The parts I read closely look good, and I have only a few small comments (as attached). I have read the sections :

Overview - Diamond

ENSO & Tropical Pacific - Bell & Halpert

Tropical cyclones, Overview - Diamond & Levinson

Tropical cyclones, SW Pacific Basin - Salinger & Burgess

Intertropical convergence zones, Pacific ITCZ - Mullan

### **Page 3, lines 75-78:**

*Therefore, La Niña-like impacts on the upper-tropospheric (200-hPa) circulation were already evident during June-August (JJA) across the subtropical South Pacific (Fig. 4.6a), which is consistent with previous studies showing that the strongest ENSO impacts normally occur in the winter hemisphere.*

This is perhaps a bit strong. The 200hPa anomalies were stronger in SON, which is consistent with findings that show the strongest Southern Hemisphere ENSO impacts in the southern spring, and into summer (e.g. Kidson and Renwick 2000). I would drop the last part of the sentence so it reads:

*Therefore, La Niña-like impacts on the upper-tropospheric (200-hPa) circulation were already evident during June-August (JJA) across the subtropical South Pacific (Fig. 4.6a).*

Add reference:

Kidson, J. W., and J. A. Renwick, 2002: The Southern Hemisphere evolution of ENSO during 1981-1999. *J. Climate*, **15**, 847-863.

*Response: Agreed and changed all as suggested.*

### **Bottom of page 3:**

Could add a final sentence to regional impacts stating that the South Pacific Convergence Zone (SPCZ) was displaced through ENSO activity, leading to regional rainfall anomalies over the SW Pacific (see section by Mullan, later – *I can't work out which section number it is though!*).

*Response: Agreed and changed appropriately.*

### **Page 17, first paragraph: Add at beginning of paragraph:**

*The TC season in the Southwest Pacific normally runs from November through April.*

*Response: Agreed and changed appropriately.*

**Page 17, line 493, change to:** “...*the first TCs of 2007*,...”

Response: Agreed and changed appropriately.