

From: David Viner <d.viner@uea.ac.uk>  
To: m.hulme@uea.ac.uk, s.raper@uea.ac.uk  
Subject: Fwd: Re: Climate Sensitivity  
Date: Tue, 18 May 1999 11:48:40 +0100

Mike

The climate sensitivity of HadCM2.....pick a value between 2.5 and 4.1K

D

>Envelope-to: f046@cpca11.uea.ac.uk  
>Date: Tue, 18 May 1999 11:27:48 +0100 (BST)  
>From: T Johns <tcjohns@meto.gov.uk>  
>Subject: Re: Climate Sensitivity  
>To: d.viner@uea.ac.uk  
>Cc: tcjohns@meto.gov.uk  
>Status:

>  
>Hi David,  
>  
>I have just got back from leave today - sorry for the lack of response  
>to your emails.

>  
>On climate sensitivity, the equilibrium sensitivity in HadCM2 was difficult  
>to get a definitive answer for initially as the conventional slab experiment  
>was unstable, so we estimated it from part of a transient coupled run  
>instead. We quoted 2.5 K in the original Nature paper. Recently we  
>have done a HadAM2 slab experiment (modified sea ice and slab ocean physics)  
>which indicated 4.1 K rather than 2.5 as an equilibrium value. This is  
>quoted in a paper submitted as a CMIP study. The HadAM3 conventional  
>slab experiment gave the 3.3 K figure I think. The HadCM2 discrepancy  
>indicates the perils of this yardstick; other research here suggests that  
>the effective climate sensitivity does respond to climate change feedbacks  
>in transient experiments (with HadCM2 particularly). The early 2.5 K  
>estimate has been revised upwards based on a long coupled run of HadCM2 to  
>be closer to the 3.3 K we got from HadCM3 equilibrium slab experiments.

>  
>Comparing transient temperature responses to similar time-varying forcing  
>may be a better indication of real sensitivity, but so long as we quote  
>single climate sensitivity numbers I fear that there is scope for confusion.  
>  
>Tim.

>  
>PS: I will try to get an update on the HadCM3 references sorted out for you.

>  
>> Tim  
>>  
>> I'm a bit confused as now I have seen a number of different values, in  
>> HCTN2 you mention that HadAM3 has a climate sensitivity of 3.3 degrees K  
>> and that this is similar to HadCM2. Is this the case and is such a value  
>> available from a comparable HadAM2 experiment.

>>  
>> Many regards  
>>  
>> David  
>>  
>> PS Did you get my message about references?

>  
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