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Erratum to: Initialisation and predictability of the AMOC over the last 50 years in a climate model

Didier Swingedouw · Juliette Mignot ·
Sonia Labetoulle · Eric Guilyardi · Gurvan Madec

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In Fig. 3 of the published version, the heat content was integrated down the 200 m only in the model simulations, thereby biasing the comparison with the data, which are themselves integrated down to 700 m. The new figure shows the heat content integrated down to 700 m both in the simulations and in the data. This correction generally improves the comparison of the model simulations with the observations of heat content for the most recent period, especially in the Atlantic basin.

The corrected numbers in section 3.1, concerning the computed trends for global heat content from Fig. 3 for the period 1955–2005, are 113.1 TW ($r^2 = 0.98$) in the nudged simulations and of 129.5 TW ($r^2 = 0.84$) in the historical

simulations as compared to the trend of 69.5 TW (unchanged, $r^2 = 0.70$) in the data. The agreement is therefore lower over this time period than suggested in the published version, but it increases if computed over the more recent time frame 1970–2005 with 115.5 TW ($r^2 = 0.96$) in the nudged simulations, 189.0 TW ($r^2 = 0.96$) in the historical simulations and 108.6 TW ($r^2 = 0.83$) in the data. While the historical simulations still overestimates the heat content trend over this last time period, which could be related to the too large climate sensitivity in IPSL-CM5A-LR (Dufresne et al., this issue), the nudging leads the heat content to be closer to the observations.

We believe that this error may not modify the main messages of the paper, which are more related to the impact of volcanoes on the AMOC.

The online version of the original article can be found under doi:[10.1007/s00382-012-1516-8](https://doi.org/10.1007/s00382-012-1516-8).

D. Swingedouw (✉)
LSCE/IPSL, Gif-sur-Yvette, France
e-mail: swingedo@cerfacs.fr

J. Mignot · S. Labetoulle · E. Guilyardi · G. Madec
LOCEAN/IPSL, Paris, France

E. Guilyardi
NCAS-Climate, University of Reading, Reading, UK

G. Madec
NOCS, Southampton, UK

Fig. 3 Corrected Fig. 3: Heat content from Levitus et al. (2009) with slight recent improvements in red (cf. http://www.nodc.noaa.gov/OC5/3M_HEAT_CONTENT), from the nudged simulations in blue and from historical simulations in black expressed in 10^{22} J. a for the global ocean, b over $30\text{--}70^\circ\text{N}$ in the Atlantic. The reference period is 1961–1990, and a 3-year running mean has been applied to all the data. The error bar for historical and nudged simulations corresponds to two standard deviations computed for each five-member ensemble. The red vertical lines represent the years with a large eruption, i.e. the Mount Agung in 1963, El Chichon in 1982 and Pinatubo in 1991

