



## **Heating of Earth's climate continues in the 2000s based upon satellite and ocean observations**

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Motivated by an apparent inconsistency between top of atmosphere radiative fluxes and ocean heat content changes, we present a re-analysed assessment of changes in radiative heating of the planet since 2000 and find (i) no evidence for inconsistency between changes in radiative energy at the top of the atmosphere and ocean heating, (ii) variation in net radiative flux consistent with El Nino Southern Oscillation and (iii) continued heating of Earth's climate after 2000 of magnitude  $0.5 \pm 0.43 \text{ W m}^{-2}$ , slightly lower than previous estimates but nevertheless significantly positive. Changes in net radiation estimates since 1985, using a variety of satellite products, are compared with CMIP5 climate model simulations. Models experiments which prescribe realistic sea surface temperatures (AMIP5) are able to capture the interannual variations well. Changes in net radiative cooling of the atmosphere is also analysed and links with the hydrological cycle will be discussed.