Title: “Impacts of the Atlantic Multidecadal Variability (AMV) on the tropical Pacific: a multi-model study”

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Abstract: The Atlantic Multidecadal Variability (AMV) has been linked to the observed slowdown of global warming over 1998-2012 through its impact on the tropical Pacific. Given the global importance of tropical Pacific variability, better understanding this Atlantic-Pacific teleconnection is key for improving climate predictions, but the robustness and strength of this link is uncertain. Analysing a multi-model set of sensitivity experiments, we find that models differ by a factor 10 in simulating the amplitude of the Equatorial Pacific cooling response to observed AMV warming. The inter-model spread is mainly driven by different amounts of moist static energy injection from the tropical Atlantic surface into the upper troposphere. We reduce this inter-model uncertainty by analytically correcting models for their mean precipitation biases and we quantify that, following an observed 0.26ºC AMV warming, the equatorial Pacific cools by 0.16ºC with an inter-model standard deviation of 0.03ºC.