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Atmospheric Chemistry and Physics Discussions

Interactive comment on "An empirical model of global climate – Part 1: Reduced impact of volcanoes upon consideration of ocean circulation" *by* T. Canty et al.

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Based on the short comment submitted by Robert Knox on 24 December 2012, we have added the following text to the manuscript, which includes a reference to the Douglass et al. (2006) paper that was the basis for this comment. In addition, the paragraph noting we do not find negative feedback in our model has been deleted, because we now realize this statement is not germane to the issue that Robert Knox has raised.

"Douglass and Knox (2005) conducted a regression analysis of MSU lower tropospheric temperature measurements and concluded the atmosphere exhibited a neg-

ative feedback following the eruption of Pinatubo. This paper has been discussed in a series of published comments and replies following initial publication, concluding with another paper, Douglass et al. (2006), that reinforces their notion of a negative feedback within the climate system in the short time period following the Pinatubo eruption. Our estimates of climate feedback, given above, represent a best fit to the entire 111 yr temperature record, without direct focus on the time period immediately following major eruptions. We resist the temptation to assess climate feedback immediately after the four major eruptions since 1900 because our framework is based upon stratospherically adjusted RF, and relating the ERBE measurements (top of atmosphere) to the tropopause is beyond the scope of this study. If the true influence of Pinatubo on global cooling is as small as suggested by our lower limits, and there was indeed a strong, global, negative RF anomaly at the tropopause, then perhaps there was a negative feedback following the eruption of Pinatubo, as suggested by Douglass and Knox (2005) and Douglass et al. (2006)."

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 23829, 2012.