

Interactive comment on “Can we explain the observed methane variability after the Mount Pinatubo eruption?” by N. Bândă et al.

Anonymous Referee #1

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General comments:

This study investigates the reasons for the decrease in the growth rate of atmospheric methane after the Pinatubo eruption. The authors use the TM5 GCM to quantify individual effects of seven different potential drivers of CH₄ variability between 1990–95. Previous studies of this topic focused on fewer driving processes. The model results can reproduce the observed variability, although the authors find that none of the two emission inventories they use can properly capture the observed methane variability.

The paper is of good scientific quality and well written. Statements are clear and concise, hypotheses are carefully stated, and complicated processes are clearly described. I found no scientific issues and consequently have no specific comments.

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Technical corrections:

p 19121 line 26: "All variables have been averaged with a 12-month running mean...", all except the AOD (Fig 1a), I presume.

p 19127 line 1: "In ORCHIDEE, CH₄ emission ...", emissions

p 19142 line 5: "Pacific Ocean", Pacific

p 19142 lines 13–18: can be deleted; nearly identical to what stands at the beginning of appendix A

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 19111, 2015.