

Interactive comment on “Antarctic stratospheric warming since 1979” by Y. Hu and Q. Fu

Anonymous Referee #2

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The paper entitled Antarctic stratospheric warming since 1979 by Hu and Fu presents an analysis of satellite Microwave Sounding Unit observations for the period from 1979 to 2006. The main aim of the study is to explore the association between the sudden stratospheric warmings and the increasing wave activity from the troposphere into the stratosphere, suggesting that the warming is caused by enhanced wave-driven dynamical heating. The final conclusion is that the Antarctic stratospheric warming is likely induced by sea surface temperature warming.

Advanced instrumentation and methods are used within this study, the paper is well written and the results are clearly presented. As such, the paper should be accepted for publication after considering the remarks that follow:

(1) There are several places in the manuscript where the reader would benefit from additional references, which are needed to strengthen the point that authors are making.

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As authors revise the manuscript, really place their selves in the reader's position and make an attempt to carefully document key points. For instance, although authors are discussing the unprecedented major SSW over Antarctica in 2002, at various places in your manuscript there is no any reference to the first journal publications on the subject. A few additional examples: - Page 1705, lines 15-16: Put reference about the unique sudden warming event occurred in the Antarctic in 2002. - Page 1711, lines 7-9: Insert additional references (in particular those that have been published earlier)

(2) A good editorial review would greatly benefit the manuscript.

In conclusion, although the algorithms applied are well documented, the applications where these algorithms have been applied are not mentioned. The authors should reference in the Introduction previous scientific work on the subject.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 1703, 2009.

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