

Winter Warming After Big Volcanic eruptions: Mechanisms and Model Problems

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Winter warming due to volcanic disturbances has been simulated with different atmospheric models. The main mechanism seems to be a modulation of vertical propagation of planetary wave energy exciting the positive phase of an inherent atmospheric variability mode. This mode is similar to the tropospheric North Atlantic Oscillation. In the stratosphere it is the upper part of the Arctic Oscillation. Interaction of these modes will be discussed and problems arising from the preference of the "strong polar vortex regime" by most of the climate models will be shown.