

INTERANNUAL VARIABILITY OF MARTIAN DUST STORMS IN ASSIMILATION OF SEVERAL YEARS OF MARS GLOBAL SURVEYOR OBSERVATIONS

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We have assimilated into a general circulation model of the atmosphere more than two complete Martian years of atmospheric temperature profiles and dust opacity below about 40 km, provided by the Thermal Emission Spectrometer aboard Mars Global Surveyor. This multiannual 4-D picture of Martian climatology, which includes the global dust storm of 2001, is a unique opportunity to study the interannual variability of dust seasons and dust storms, and their effects on the global meteorology, an issue which MGCMs presently underestimate. Differences between a "normal" dust season and a global dust storm on Mars may help to give insight into the conditions which trigger the onset of a global dust storm.