A Climate Database for the Martian Atmosphere

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ABSTRACT

A database of statistics which describes the climate of Mars has been constructed by two european teams from Paris (LMD) and Oxford (AOPP), with the support of the European Space Agency (`ESTEC TRP contract 11369/95/NL/JG`). Data are direct outputs of multi-annual simulations performed with the General Circulation Models (GCM) developped jointly at these two laboratories. The models have been validated against the main features of the meteorology of Mars, as observed by spacecraft missions (Mariner 9, Viking, Mars Pathfinder). Primarily designed to provide information about the planetary environment for spacecraft designers (entry profiles in the atmosphere and environment near the surface), this database is also a most usefull tool for the scientific comunity. It is accessible through two interfaces. A fortran software gives access to one dimension profiles with a very sophisticated representation of variability. This version is distributed on a tape. A WWW interface has also been developped:

http://www.lmd.jussieu.fr/mars.html

giving access to means and standard deviations of the variables displayed here after. Data are retrieved either as printable color maps or in various standard formats such as ASCII and NetCDF.

Variable	units	2-D or 3-D
CO_2 ice cover	$kg\ m^{-2}$	2-D
Surface emissivity	none	2-D
Surface temperature	K	2-D
Surface pressure	Pa	2-D
Atmospheric temperature	K	3-D
Zonal (east-west) wind	$m\ s^{-2}$	3-D
Meridional (north-south) wind	$m\ s^{-2}$	3-D
Atmospheric density	$kg\ m^{-3}$	3-D
Boundary layer eddy kinetic energy	$m^2\ s^{-2}$	3-D