GEM-Mars GCM simulations of D/H in Mars water vapor for Daerden et al., JGR, 2021

Dataset description.

Format: .h5 (hdfv5)

gem\_columns\_nogds.h5 , gem\_columns\_gds.h5

Contain simulated zonal mean D/H columns for gas phase, clouds and surface ice, for the “no-GDS” (MY33) and “GDS” (MY34) simulations. Units are VSMOW. These data are used in Figs. 2, 3, 12, and 15.

gem\_profiles\_cardinal\_seasons.h5

Contains simulated zonal mean D/H profiles for gas phase and clouds (in VSMOW) for the no-GDS (MY33) simulation, for the four cardinal seasons. These data are used in Figs. 4 and 5.

gem\_profiles\_at\_latitudes.h5

Contains simulated zonal mean D/H profiles for gas phase and clouds (in VSMOW) for the no-GDS (MY33) simulation, for 3 latitudes (60N, 0 and 60S). These data are used in Figs. 3, 6, 7 and 13.

gem\_profiles\_at\_latitudes\_gds.h5

Contains simulated zonal mean D/H profiles for gas phase and clouds (in VSMOW) for the GDS (MY34) simulation at the time of the GDS (Ls=180°-230°), for 3 latitudes (60N, 0 and 60S). These data are used in Fig. 13.

gem\_dtoh\_maps.h5

Contains data for the simulated D/H maps (column and surface, in VSMOW) used in Figs. 8 and 9.

gem\_diurnal\_profiles\_cardinal\_seasons.h5

Contains simulated zonal mean diurnal cycle of D/H profiles (in VSMOW) for the no-GDS (MY33) simulation, for the four cardinal seasons. These data are used in Fig. 10.

gem\_profiles\_gds.h5

Contains simulated zonal mean D/H profiles (in VSMOW) for the no-GDS (MY33) and GDS (MY34) simulations during the GDS. These data are used in Fig. 14.

gematnomad\_dh\_villanueva\_nogds.h5

Contains simulated D/H profiles (in VSMOW) for the no-GDS (MY33) simulation, interpolated to the NOMAD D/H profiles from Villanueva et al. (2021).

gematnomad\_dh\_villanueva\_gds.h5

Contains simulated D/H profiles (in VSMOW) for the GDS (MY34) simulation, interpolated to the NOMAD D/H profiles from Villanueva et al. (2021).

gematnomad\_icemmr\_liuzzi\_nogds.h5

Contains simulated ice mass mixing ratio (mmr) profiles for the no-GDS (MY33) simulation, interpolated to the NOMAD ice mmr profiles from Liuzzi et al. (2020).

gematnomad\_ icemmr\_liuzzi\_gds.h5

Contains simulated ice mass mixing ratio (mmr) profiles for the GDS (MY34) simulation, interpolated to the NOMAD ice mmr profiles from Liuzzi et al. (2020).