

PMIP4 CESM dust data

Data files

- file names = PMIP4_DUST_Al bani_<field>_<expt>.nc
 - field = see [Variables](#) section below
 - expt = PI (pre-Industrial), MH (mid-Holocene) or LGM (Last Glacial Maximum)
 - The gaussian weights file does not depend on the experiment:
PMIP4_DUST_Al bani_gw.nc
- each variable for each climate period is in a separate file. In the conc case, which contains the three-dimensional dust concentration in the atmosphere, ancillary variables are also included in the same file, i.e. those necessary to fully describe the vertical coordinate (lev, ilev, hyai, hybi, hyam, hybm, PS)

Dimensions

- nb_time = 12
 - 12 time steps in each file, corresponding to the climatological monthly averages (with the exception of the soil erodibility variable), indicated as days since 2020-01-01 00:00:00. They are assumed to all have equal weight
 - time = [14, 44, 74, ... 284, 314, 344]
- nb_lat, nb_lon = 192, 288 (0.95 x 1.25 degrees)
 - latitude_values = [-90, -89.05759, -88.11518, ... 88.11518, 89.05759, 90]
 - longitude_values = [0, 1.25, 2.5, ... 356.25, 357.5, 358.75]
- size_bin = 4 (dust particle size classes)
 - dust size bin edges = 0.1, 1.0, 2.5, 5.0, 10.0 μm (diameters)
 - size values = [1, 2, 3, 4]
 - 1 = 0.1-1.0 μm , 2 = 1.0-2.5 μm , 3 = 2.5-5.0 μm , 4 = 5.0-10.0 μm (diameters)
- nb_levels = 26 hybrid sigma-pressure levels
 - only for the conc variable
 - check the PMIP4_DUST_Al bani_conc_<expt>.nc files for details about the hybrid coordinates

References



Please cite **all** the following papers

- Albani, S., Mahowald, N. M., Perry, A. T., Scanza, R. A., Zender, C. S., Heavens, N. G., Maggi, V., Kok, J. F., and Otto-Bliesner, B. L.: **Improved dust representation in the Community Atmosphere Model**, J. Adv. Model. Earth Syst., 6, 541-570, doi:[10.1002/2013MS000279](https://doi.org/10.1002/2013MS000279), 2014.
- Albani, S., Mahowald, N. M., Winckler, G., Anderson, R. F., Bradtmiller, L. I., Delmonte, B., François, R., Goman, M., Heavens, N. G., Hesse, P. P., Hovan, S. A., Kang, S., Kohfeld, K. E., Lu,

H., Maggi, V., Mason, J. A., Mayewski, P. A., McGee, D., Miao, X., Otto-Bliesner, B. L., Perry, A. T., Pourmand, A., Roberts, H. M., Rosenbloom, N., Stevens, T., and Sun, J.: **Twelve thousand years of dust: the Holocene global dust cycle constrained by natural archives**, *Clim. Past*, 11, 869-903, doi:[10.5194/cp-11-869-2015](https://doi.org/10.5194/cp-11-869-2015), 2015.

- Albani, S., Mahowald, N. M., Murphy, L. N., Raiswell, R., Moore, J. K., Anderson, R. F., McGee, D., Bradtmiller, L., Delmonte, B., Hesse, P. P., and Mayewski, P. A.: **Paleodust variability since the Last Glacial Maximum and implications for iron inputs to the ocean**, *Geophys. Res. Lett.*, 43, doi:[10.1002/2016GL067911](https://doi.org/10.1002/2016GL067911), 2016.

Download

You will find below a table with all the available data files, and their *md5sum* checksum (if you want to check that you download was OK, you can just type `md5sum file.nc` and compare the result to what is displayed in the table).

If you want to download a file, click on the [PMIP4 CESM dust data download link](#) and then on the file you need.

| md5sum output | Data file |
|----------------------------------|----------------------------------|
| 8859ab3b77ce01008785b05fec5cc459 | PMIP4_DUST_Albani_aot_LGM.nc |
| a99c8627d21cdc67ab989437b0808e00 | PMIP4_DUST_Albani_aot_MH.nc |
| 118d105d29a7da31e5a443fba87c4e96 | PMIP4_DUST_Albani_aot_PI.nc |
| 5fa086e300324080614db8175b223220 | PMIP4_DUST_Albani_conc_LGM.nc |
| e7c929737c681bde8cde11198578af9e | PMIP4_DUST_Albani_conc_MH.nc |
| bf0baa1a003a2d85d306d62e2b5f20f9 | PMIP4_DUST_Albani_conc_PI.nc |
| 3727a77888c8809a0f87c8e51e37668b | PMIP4_DUST_Albani_ddep_LGM.nc |
| 568f5f2ecc516a618b27aebbf6ac8475 | PMIP4_DUST_Albani_ddep_MH.nc |
| 01db9ba162a3ec1f8bd0d0bc2abcc63a | PMIP4_DUST_Albani_ddep_PI.nc |
| d29ad13c7508a0389ef0740c83069d1a | PMIP4_DUST_Albani_emis_LGM.nc |
| 7ecaf8a616bd31ccb600c8162ad8f815 | PMIP4_DUST_Albani_emis_MH.nc |
| 5eff212c3fc96bacc119eedfe0ee91e | PMIP4_DUST_Albani_emis_PI.nc |
| e14a6ffba0b74a9211ad67e9642b5987 | PMIP4_DUST_Albani_erosion_LGM.nc |
| 5d6f767abbca1e560a5fc326e828aee1 | PMIP4_DUST_Albani_erosion_MH.nc |
| 24e8470134020cecdc552afd2dddf425 | PMIP4_DUST_Albani_erosion_PI.nc |
| 1cf6720ad615ad97b50842298fd02f51 | PMIP4_DUST_Albani_gw.nc |
| 6c7f9d1a84c36540b42ea6bb1eeadf59 | PMIP4_DUST_Albani_load_LGM.nc |
| 76079e93089a87e3fd128b9895db3297 | PMIP4_DUST_Albani_load_MH.nc |
| 2e121549b158cf9dad1761ea681ca835 | PMIP4_DUST_Albani_load_PI.nc |
| e47e21fa07df86629e1de6b38459eae0 | PMIP4_DUST_Albani_rfsl_LGM.nc |
| 46a397182b1c0324173a0bd84b8bf9b9 | PMIP4_DUST_Albani_rfsl_MH.nc |
| f9bb094451dd31a8b6d92ba320944307 | PMIP4_DUST_Albani_rfsl_PI.nc |
| 1359e872a421df6970da5e3e50f453cd | PMIP4_DUST_Albani_rfss_LGM.nc |
| cfb9261506308e84d90d1041a8cafb19 | PMIP4_DUST_Albani_rfss_MH.nc |
| 6b3e529f314775270fd87007c45d4e1b | PMIP4_DUST_Albani_rfss_PI.nc |
| a43755b757169c516d2aad9cdffa1456 | PMIP4_DUST_Albani_rftl_LGM.nc |
| fb7474a2c61668f9f2b5d88199fdf03b | PMIP4_DUST_Albani_rftl_MH.nc |

| md5sum output | Data file |
|----------------------------------|--------------------------------|
| b2de8b84a236764234a9abc9cbd3bbb7 | PMIP4_DUST_Al bani_rftl_Pl.nc |
| dfc96dbbe1bf33fc6f9e0cf7a16b8f2a | PMIP4_DUST_Al bani_rfts_LGM.nc |
| 5ad9e6586b2bc7771a7b1b0688767476 | PMIP4_DUST_Al bani_rfts_MH.nc |
| 98b9b2a122b9b9c86bd432e6d1dac502 | PMIP4_DUST_Al bani_rfts_Pl.nc |
| 182e86d78be48fc5c2c1ec57f13aa021 | PMIP4_DUST_Al bani_wdep_LGM.nc |
| f83c22185608042a92107609f59ef658 | PMIP4_DUST_Al bani_wdep_MH.nc |
| 1dc20b285c666765cf9ea61e53a20549 | PMIP4_DUST_Al bani_wdep_Pl.nc |

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