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Possible changes in dust burden between present day and the end of the 21st century

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Changes in climate and land cover significantly impact the emission and burden of dust particles. Due to the forecasted increase in greenhouse gas concentrations the climate is supposed to change. Especially changes in wind speed and precipitation have a huge effect on dust burden. Changes in climate may also impact the land cover in the coming decades. Additionally the land cover is supposed to be altered directly by humans due transformation of natural into agricultural vegetation (or agricultural into natural vegetation). These changes in land cover will change the distribution of areas where dust could be emitted.
We use a version of our global climate-aerosol model ECHAM6-HAM that derives interactively potential dust sources (Stanelle et al., 2014) to give estimates about possible changes in dust burden between today and different future conditions. We based our simulation on 3 different future scenarios (rcp2.8, rcp4.5, rcp8.5) performed with the MPI-Earth system model during the CMIP5 project.

References:
Stanelle et al. (2014), Anthropogenically induced changes in twentieth century mineral dust burden and the associated impact on radiative forcing, J. Geophys. Res., 119, 13,526-13,546, doi:10.1002/2014JD022062.