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Interactions between dust and climate in a GCM

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Mineral dust in the atmosphere has the potential to affect climate, particularly in regions near dust sources, but these changes in climate may also feed back upon dust production. Such interactions will be explored in this presentation, using data from a version of the coupled atmosphere-ocean GCM HadGEM2-AO, which contains an interactive mineral dust scheme. Two multidecadal simulations have been performed. In one the dust is generated interactively but acts as a passive tracer in the atmosphere, in the other dust is allowed to influence climate through its direct radiative effects. Results from the two runs will be presented, to show the direct effect of the dust on climate and also the mechanisms whereby changes in climate feed back onto the dust.