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## Aerosol-forced AMOC changes in CMIP6 historical simulations.

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The Atlantic Meridional Overturning Circulation (AMOC) has been, and will continue to be, a key factor in the modulation of climate change both locally and globally. Reliable simulations of its decadal to century-timescale evolution are key to providing skilful predictions of future regional climate, and to understanding the likelihood of a potential AMOC collapse. However, there remains considerable uncertainty even in past AMOC evolution. Here, we show that the multi-model mean AMOC strengthened by approximately 10% to 1985 in new historical simulations for the 6th Coupled Model Inter-comparison Project (CMIP6), contrary to results obtained from CMIP5. The simulated strengthening is due to a stronger anthropogenic aerosol forcing, in particular due to aerosol-cloud interactions. However, comparison with an observed sea surface temperature fingerprint of AMOC evolution during 1850-1985, and the shortwave forcing during 1985-2014, suggest that anthropogenic forcing and the subsequent AMOC response may be overestimated in some CMIP6 models.