



Attribution of observed surface humidity changes to anthropogenic influence

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Atmospheric humidity is an important climate variable affecting the radiative balance of the troposphere, extreme rainfall, and human heat stress, among other things. We use a newly-compiled gridded surface specific humidity dataset together with output from HadCM3 to examine the causes of observed trends in humidity. After verifying that the simulated variability in specific humidity is realistic, we use detection and attribution methods to detect the response to both anthropogenic and natural forcings in observed specific humidity. Specific humidity is found to have increased in response to rising temperatures, with relative humidity remaining approximately constant.