



Disruptions in precipitation cycles found in global simulations of present climate

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Disruptions in the spatiotemporal distribution of surface precipitation that are induced by global warming may affect Earth's climate even more significantly than changes in the total precipitation amount. Finding such disruptions at global scales is not straightforward, as it requires disentangling a weak signal from a 5-D configuration space. By using state-of-the-art climate model simulations and using well-tested analytical methods, changes in the global precipitation cycles have been found for 1862–2003. It has also been found that the disruptions may be attributable to anthropogenic forcing, and that these appear in the interannual long-term variability of the atmosphere. This suggests a global effect of the anthropogenic forcings on precipitation, which may be indicative of changes in the precipitation patterns linked with changes in the thermodynamics of the precipitation microphysics and to a lesser extent with the dynamics.