



Evidence for increased risk from Atlantic tropical cyclones with rising temperatures.

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We used tide gauge records to construct an index of storm surge intensity in the tropical Atlantic cyclone region, which we interpret as a measure of the threat posed by tropical cyclones. Changes in surge index return periods are related to changes in global average temperature at the 95% significance level. Surge risk increases with temperature for all event sizes, but larger events become relatively more frequent. We provide observational evidence that with 2°C warming we would expect an ~8 fold increase in the frequency of events of Katrina magnitude.