



How do changes in internal climate variability modulate the occurrence of extreme events?

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In order to assess the consequences of climatic changes, the changing intensity and frequency of extreme events must be quantified. We here do so through a consistent evaluation of the changing mean climate and the change in internal variability around the mean in CMIP5 model simulations. The changing internal variability is estimated through a novel approach that allows one to consistently quantify changes in internal climate variability from ensemble model simulations. We combine the changes in internal variability and the mean state of temperature and precipitation in a multi-model consensus view to assess present and future changes in extreme events such as heat waves and cold extremes, droughts and floods. For these parameters, we quantify globally on a grid-point level the direction and magnitude of the expected changes and their related uncertainties.