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## Attribution of high-impact extreme sea surface temperature events

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We evaluate whether anthropogenic influence has affected the observed extreme sea surface temperature (SST), defined as discrete events of anomalously warm or cold ocean temperatures, over the last decades. To this end we utilize three large ensembles of coupled climate models and use two methods. The first method analyzes the observed long-term spatiotemporal changes of extreme SST to detect the presence of a signal beyond changes solely due to natural (internal) variability and to attribute the detected changes to external climate drivers. The second method is based on single event attribution, which determines how an external forcing have changed the likelihood of high-impact extreme SST events, such as the north Atlantic cold blob, the northeast Pacific warm blob, Tasman Sea marine heatwave, etc. In this study we further combine observations and model simulations under present and future forcing to assess how internal variability and anthropogenic climate change modulate extreme SST events.