



Effects of warming Atlantic sea surfaces on tropical cyclone losses

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First step of the project is a regression analysis of June-October annual tropical sea surface temperatures against normalized hurricane losses from the U.S. since 1900. Original hurricane losses were normalized to present day values by application of a methodology developed by Landsea and Pielke using wealth, population and inflation. We find a general increase in mean annual normalized losses from tropical cyclones with increasing sea surface temperatures in the North Atlantic. In addition one can find that the percentage of years exceeding specified loss thresholds – US\$ 1bn, 5bn and 10bn – is much higher in so-called warm phases as defined according to the Atlantic Multidecadal Oscillation than in cold phase years. As a result these findings strongly indicate that increasing tropical sea surface temperatures in the Atlantic will result in hurricane loss distributions with increasing high-loss portions.