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Tropical cyclones and climate change: recent results and uncertainties

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Abstract

In the first part of the talk I'll give an overview of the current understanding and recent progress on the influence of climate changes on tropical cyclones. I'll discuss both attribution of current trends, as well as projections for the end of the century. In the second part of the talk, I'll describe the hazard model developed at Columbia University to study tropical cyclones risk, namely CHAZ (Columbia Hazard Model) and discuss its main properties in the current climate. Then I'll discuss two applications of this model: first, analyzing the current risk of tropical cyclones to Mumbai; second, describing how CHAZ can be used to study the influence of climate change on tropical cyclones and our



recent results on this topic. In particular, I'll discuss the uncertainties in tropical cyclone frequency projections based on CHAZ and compare with the current state-of-the-art knowledge on this topic.