



## **On the relationship between West African dust outbreaks and Atlantic hurricane activity**

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Recent work has shown a statistical climatological relationship between African dust outbreaks and North Atlantic tropical cyclone frequency and intensity. However, although observational studies have suggested thermodynamic connection between mineral aerosols and tropical cyclones, a definite causal link has yet to be proven. Here I propose that the long-term association between dust storms and tropical cyclones is through the aerosols' surface radiative forcing. In this presentation I will review some recent advances in understanding the link between dust and hurricanes, present a theoretical framework for how dust and tropical cyclones are connected in the Atlantic climate system, and describe a new model that uses satellite observation of aerosols to quantify the impact dust has on ocean temperature. I will also describe results from this model, which suggests that changes in Atlantic dust cover have a non-negligible impact on ocean temperature, and are partially responsible for the recent upward trend in tropical Atlantic surface temperatures that are often associated with anthropogenic increases in greenhouse gases.