



East African lightning as a precursor of Atlantic hurricane activity

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Recent years have shown the tremendous damage and loss of life that can be caused by Atlantic Ocean hurricanes. The majority of these hurricanes start as African Easterly Waves (AEWs) over continental West Africa. In this paper we provide evidence showing the connection between lightning activity over eastern Africa, and the AEWs that leave the west coast of Africa, some of which develop into hurricanes. We have analyzed the 2005 and 2006 hurricane seasons, one a very active hurricane year (2005), and the other a very quiet year (2006). More than 90% of the tropical storms and hurricanes during these 2 years were preceded by periods of above average thunderstorm activity in eastern Africa. During 2006 not only was the mean east African lightning activity 23% lower than during 2005, but the number of days above the mean (the variability) was 20% less than in 2005. We suggest the possibility that lightning activity in tropical Africa may represent an important precursor of Atlantic hurricane formation.