

Weather, hurricanes, and solar radiation

[Science](#), [Physics](#)



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Weather, Hurricanes and Solar Radiation Atlantic Hurricane occurs during the period from June through to the month of December. American National Weather Service refers to the period as the annual month of the North Atlantic Hurricane (Elsner, 2009, p. 59). During the month of December, there is excessive supply of moisture and heat from the tropical ocean. The moisture supply reduces stability of the atmosphere that establishes favorable environment for organized convections that act as a precondition to tropical cyclones.

August through November is the time that the hurricanes activity becomes more active. There are hurricanes that first appear on June or July and that means they will stay a little longer than those hurricanes that appear in August (Elsner, 2009, p. 61). Generation of hurricanes begins to cool with the cooling of the water in late autumn. At this time, the weather pattern fails to favor the development of tropical development. North Atlantic seasonal cycle pronounces its peak activity during August and September where only 17 percent of activity happens beyond the three months duration of August to October (Elsner, 2009, p. 65). The examination of North Atlantic took into account the mean number of for all hurricanes in a year's time and for total. North Atlantic experienced hurricanes every season due to the presence of the budget heat and seasonality effects.

Budget heat effects influence the hurricanes to occur mostly from June through to December. During this time, there is perfect balancing of heat that earth absorbs in form of radiation. If this absorption did not occur, then the earth would have extremely high or low temperatures. The seasonal variability has many, but important parameters associated with the North

Atlantic Hurricanes. One such parameter is the El Niño that is helpful in determining, through analysis, whether the season would be active. El Niño takes into account a number of atmospheric variables. El Niño has a characteristic of warm sea temperatures on the surface especially over the equatorial Pacific. The temperature relates to westerly winds of up to 200-millibar on the sea. The El Niño also has a link with the Caribbean surface pressure and the western Atlantic. When El Niño occurs, stronger Westerlies bring forth fleeing over the hurricane producing areas of the western Atlantic as well as generating higher surface pressure. These occurrences suppress the hurricane development especially if it occurs earlier than October to November. El Niño southern oscillation, therefore, plays a vital role in determining whether hurricanes take place or not.

The next important seasonal hurricane variability is the Quasi-Biennial Oscillation. It occurs in the earth's stratosphere and involves the circulation of east west winds around the earth. The circulation takes place between 60,000 to 70,000 feet above the earth's surface along the equatorial region. It takes approximately two years for the east- west or the west-east winds to complete to complete one whole cycle. The vigorous circulation affects the season and variability in North Atlantic hurricanes occurrence.

African Rainfall (AR) is another cause for the North Atlantic hurricanes. The time at which Western Sahel rainfall and Gulf of Guinea rainfall occur affects have great impacts on activity of North Atlantic hurricane. West Africa's west-east wind pressure of the surface and temperature gradients influence the hurricane. High February-May pressure gradient of west-east winds enhances activity of Atlantic Hurricane than when the temperature gradient

is either normal or lower.

Reference

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Elsner, B. & Kara, B. (2009). Hurricanes of the North Atlantic: Climate and society. New York: Oxford University Press.

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