The El Nino & La Nina phenomena

CHAN AH KEE

Abstrak (Abstract)

El Nino/La Nina are extreme cases of a naturally occurring climate cycle controlled by the atmospheric and oceanic conditions over the tropical Pacific Ocean. The heat at the tropical Pacific Ocean interacts with the atmospheric circulation, influencing the distribution of precipitation. The warmer parts of the ocean stimulate convection (rising of air) leading to cloud formation and rainfall. Therefore, any changes in the distribution pattern of the temperature of the ocean surface will affect the distribution rainfall in the tropical Pacific. On the other hand, changes in the atmospheric circulation will also have an impact on the ocean water temperatures and currents. As the ocean surface of the Pacific adjusts to the seasonal movement of the sun and ocean currents, this interaction between the ocean and the atmosphere results in an oscillation of the climate system between what is now termed the El Nino (warm) phase and the La Nina (cold) phase. El Nino occurs when there is a weakening of the trade winds and a dramatic rise in temperature at the central and eastern part of the tropical Pacific Ocean. La Nina occurs when the trade winds strengthen in the tropical Pacific and substantial upwelling of cold water at the south American coast happens, causing a dramatic drop in the sea surface temperature at the eastern Pacific Ocean. The effects of these phases are opposite to each other.

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