

Dr. Gabriel Vecchi – Hurricanes, Climate Change, & Forecasting/Modeling Glossary

TERM	DEFINITION
Coriolis Force	A deflection of moving objects. In a counter-clockwise rotation system (Earth's rotation), the deflection is to the right.
Duration	The measure of continuance of any object or event within time.
Dynamical Models	Use supercomputers to solve the mathematical equations governing the physics and motion of the atmosphere.
Forecasting	The process of making statements about events whose actual outcomes (typically) have not yet been observed.
Frequency	The number of occurrences of a repeating event per unit time.
Hurricane	A tropical cyclone in the North Atlantic Ocean or the Eastern Pacific Ocean.
Intensity	The strength, for hurricanes usually represented by the Saffir-Simpson hurricane wind scale of five categories based upon the cyclone's sustained winds.
Nor'easter	A low-pressure area, that develops in response to the sharp contrast in warm Gulf Stream ocean current from the tropical Atlantic and the cold air mass from Northeast Canada. Winds in the left-forward quadrant rotate onto land from the northeast.
Statistical Models	Based on historical relationships between hurricane-specific information and the behavior of historical hurricanes.
Thermocline	A thin layer in a large body of fluid (e.g. water or air) in which temperature changes more rapidly with depth than it does in the layers above or below. The ocean thermocline separates the upper mixed layer from the deep water below.

Tornado	A rotating column of air that is in contact with both the surface of the earth and a cumulonimbus or a cumulus cloud.
Tropical Cyclone	A low-pressure center and a spiral arrangement of thunderstorms that produce strong winds and heavy rain (at least 64 knots (74 mph)). At any height in the atmosphere, the center is warmer than its surroundings.
Tropical Depression	An organized system of clouds and thunderstorms with a defined closed surface circulation and maximum sustained winds of less than 34 knots (39 mph).
Tropical Disturbance	An area of low pressure in the atmosphere, where surface winds are converging toward each other.
Tropical Storm	An organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds between 34-64 knots (39-74 mph).
Typhoon	A tropical cyclone in the Western Pacific Ocean.
Wind Shear	A difference in wind speed and direction over a relatively short distance in the atmosphere.
Winter Storm	An event in which the varieties of precipitation are formed that only occur at low temperatures, such as snow or sleet, or a rainstorm where ground temperatures are low enough to allow ice to form (i.e. freezing rain).