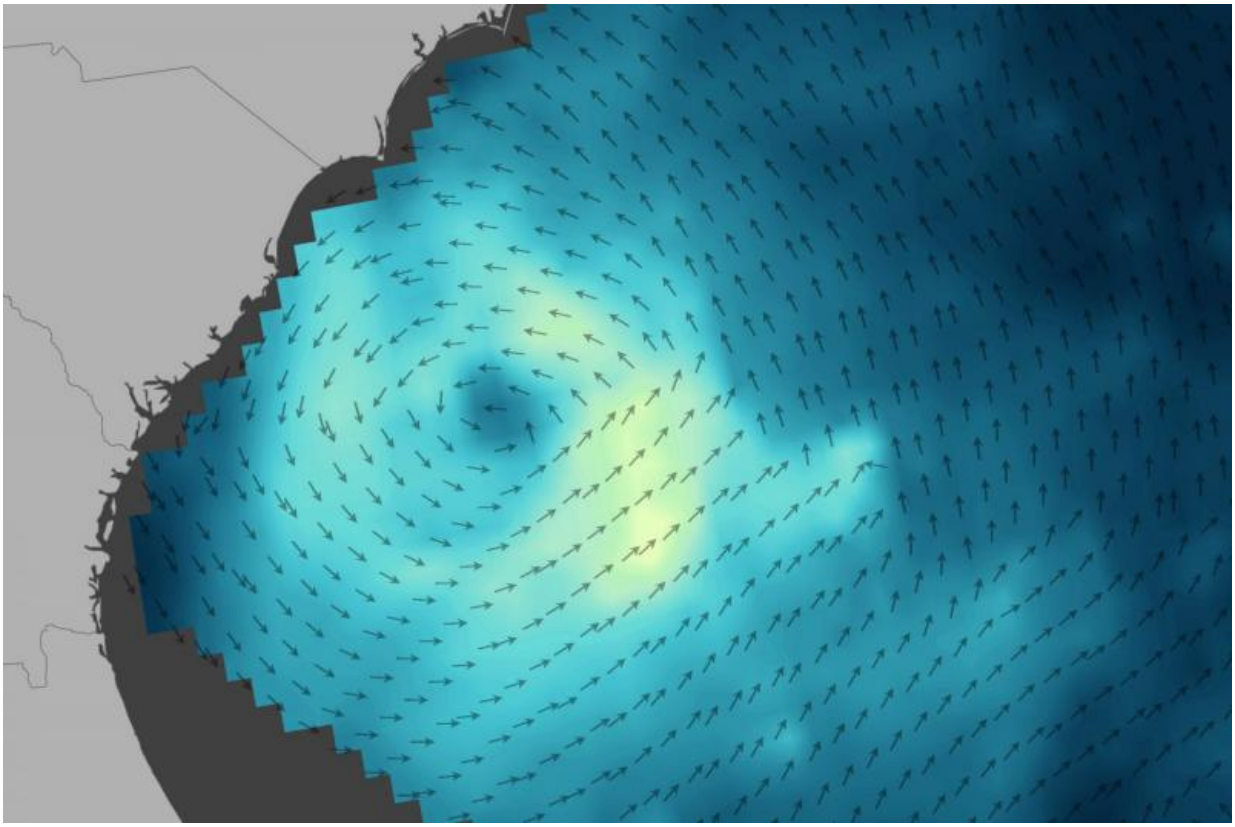
NASA analyzed the winds of Tropical Storm Ana

May 20 2015



In this RapidScat wind data image from May 8, 2015 arrows represent the direction of near-surface winds. Shades of blue indicate the range of wind speeds (lighter blue and green represent faster-moving winds). Credit: NASA Earth Observatory/Joshua Stevens/JPL

In mid-May 2015, Ana became the first named tropical storm of the

North Atlantic hurricane season. May is early to see large storms in the Atlantic; the season begins in earnest on June 1. But on May 10, Tropical Storm Ana made landfall along the Carolina coast and carried maximum sustained winds of 74 kilometers per hour (46 miles per hour).

Scientists took the opportunity to observe Ana's wind dynamics with the International Space Station-Rapid Scatterometer (ISS-RapidScat). The instrument, which joined NASA's Earth observing fleet in September 2015, measures ocean surface wind speed and direction from orbit on the International Space Station.

An image of Ana's winds was produced at NASA's Goddard Space Flight Center in Greenbelt, Maryland using data acquired by RapidScat as Ana approached the coast on the afternoon of May 8, 2015. Arrows represent the direction of near-surface winds. Shades of blue indicate the range of wind speeds (lighter blue and green represent faster-moving winds).

RapidScat does not measure storms' wind speed and direction directly. Instead, microwave pulses from the instrument reflect off the ocean surface and back toward the sensor. Rough waters—those disturbed more by wind—return a stronger signal than smooth waters. From that information, scientists can derive wind speed, as well as its direction based on the position of the waves.

The nature of this measurement method means that RapidScat is describing the winds close to the ocean's surface—useful information for weather forecasting and climate studies. Higher up in a storm, winds can be even faster. At altitudes above about 500-1,000 meters (1,600-3,300 feet), winds no longer feel the effects of friction from the surface.

More information: For more information: http://earthobservatory.nasa.gov/IOTD/view.php?id=85864&src=eoa-