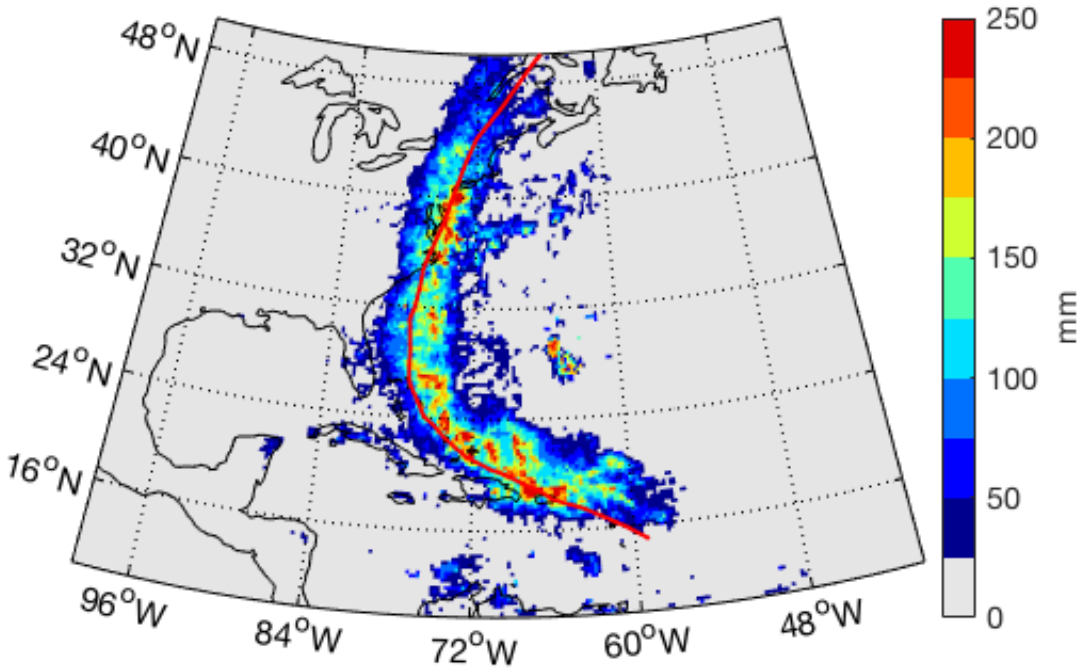
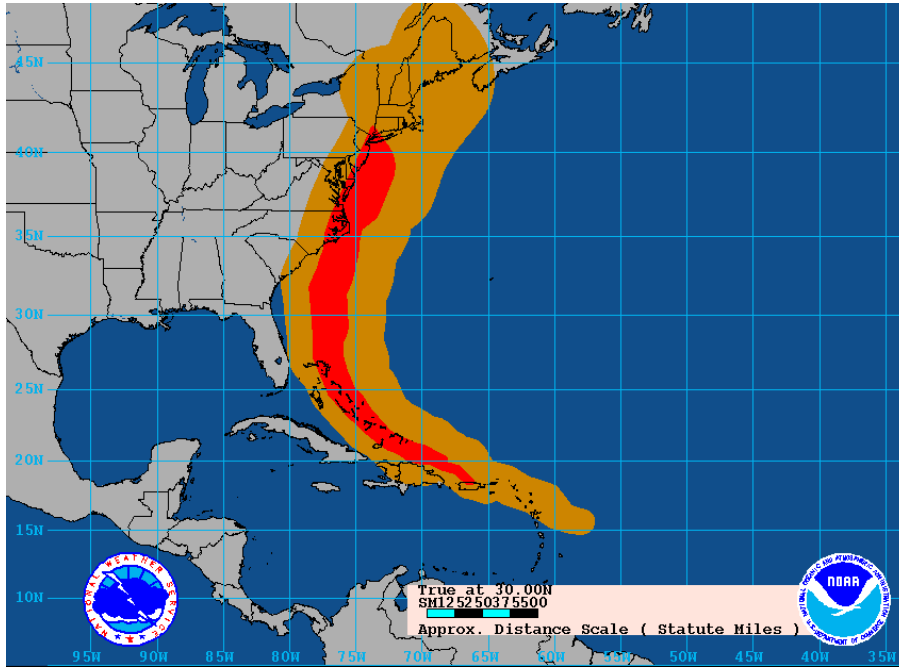
EXPLORING THE LINK BETWEEN
TROPICAL AND EXTRATROPICAL CYCLONE PATHS
&
THE HAZARDS THEY CREATE

?



HURRICANES

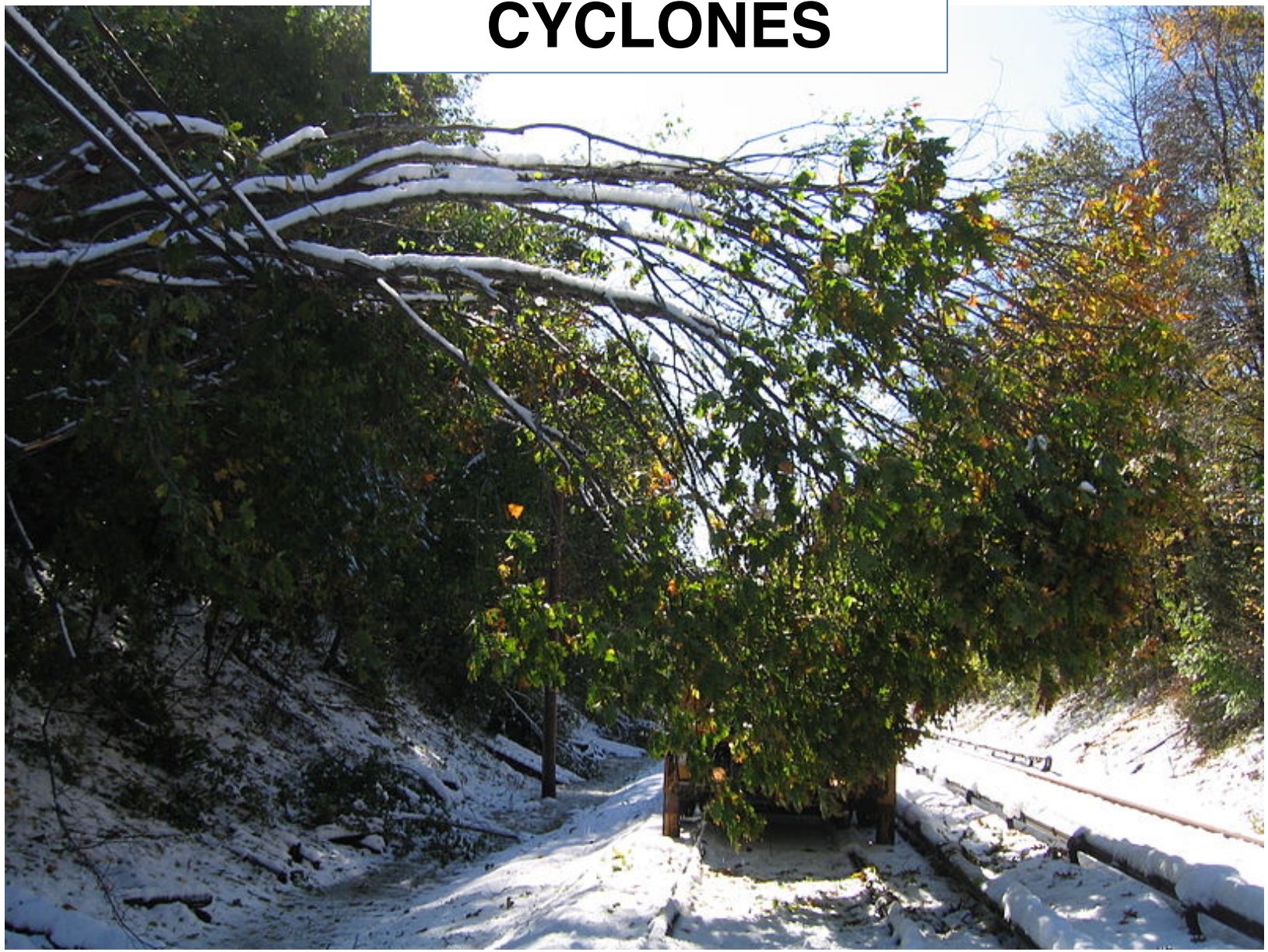
ENHANCED VISIBLE SATELLITE IMAGE OF HURRICANE IRENE (2011)



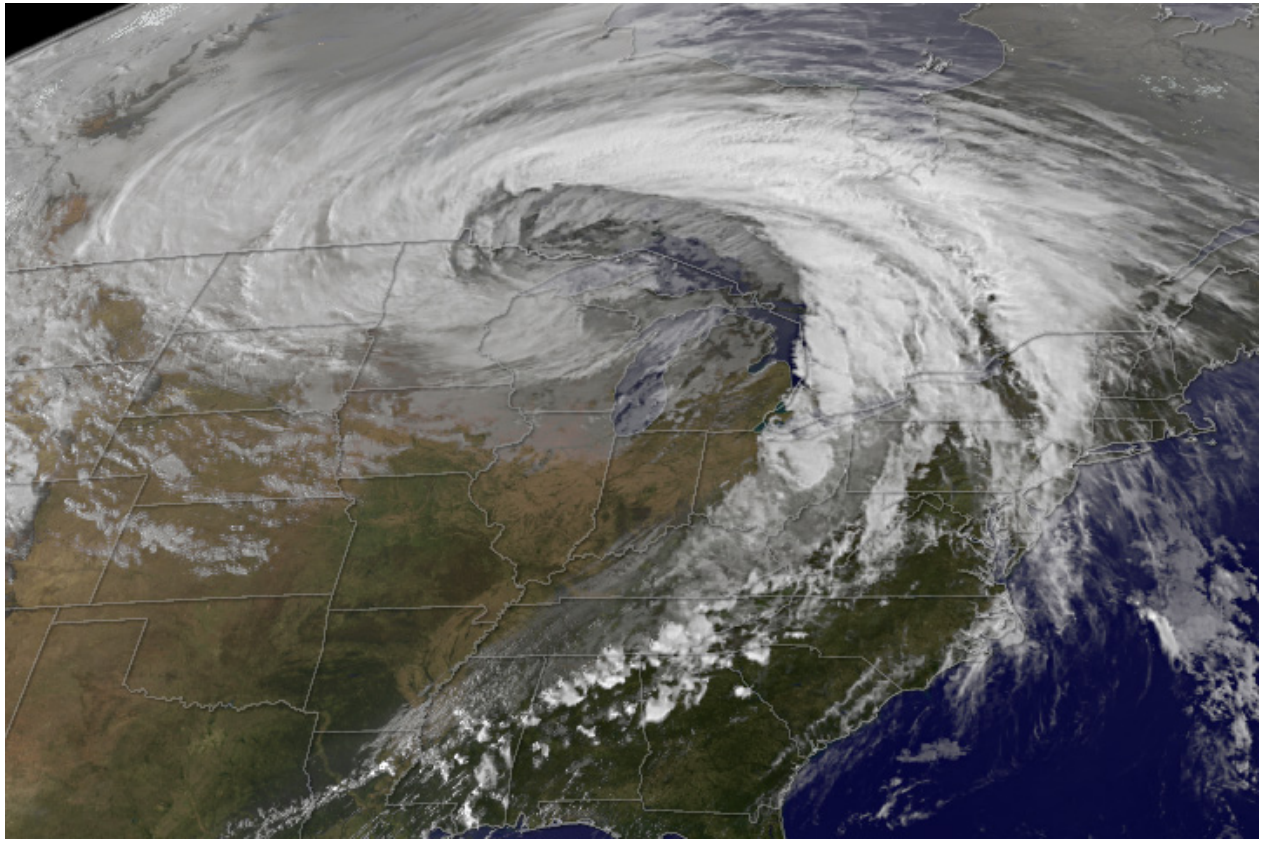
What generates the precipitation: convection (vertical instability)

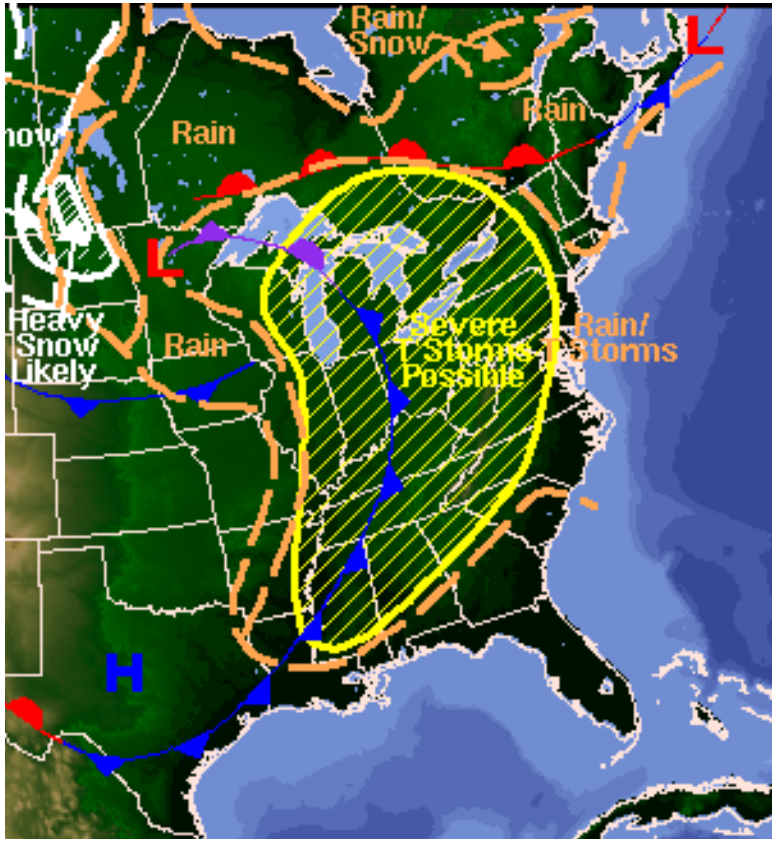
http://www.nasa.gov/mission_pages/hurricanes/archives/2011/h2011_Irene.html

EXTRATROPICAL CYCLONES



EXTRATROPICAL CYCLONES





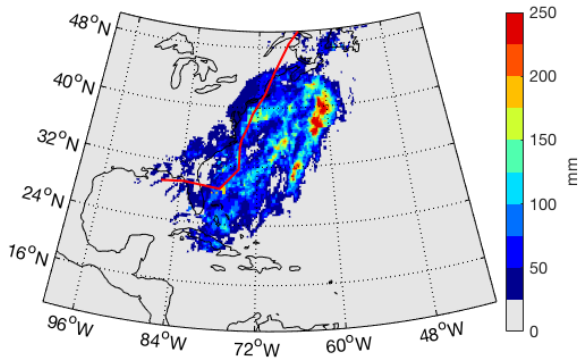
What generates the precipitation: convergence of air

Full life cycle of precipitation in:

- Extratropical Cyclones (ETC)
- Hurricanes that Tropical-Extratropical Transitions (ET)
- Hurricanes that do not transition

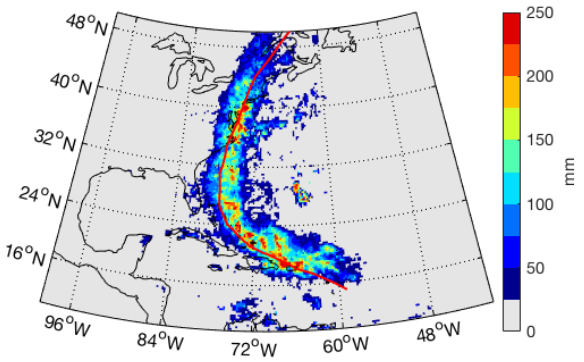
ETC Example:

24 – 27 Jan 2000



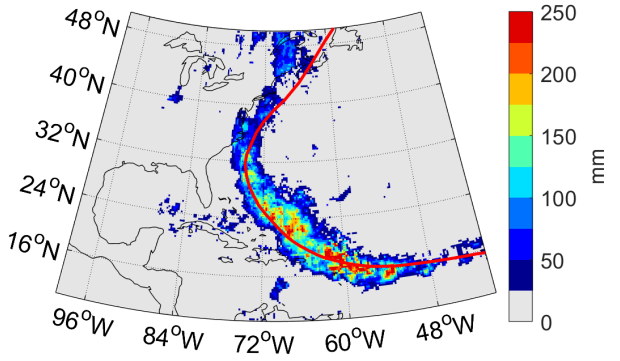
Total rainfall:
168,111 mm

ET Example:
Hurricane Irene
21 – 30 Aug 2011



Total rainfall:
191,115 mm

nonET Example:
Hurricane Earl
24 Aug – 6 Sept 2011



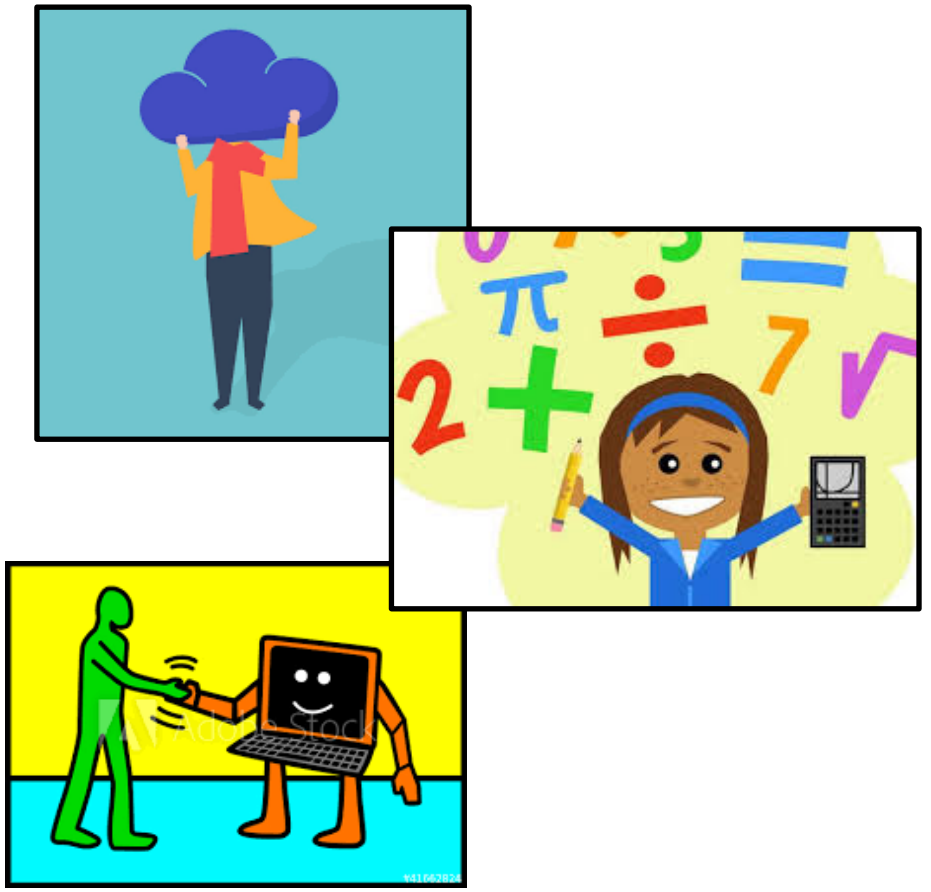
Total rainfall:
169,030 mm

Cyclone-relative Search radius 1500 km

Data: Merged satellite data: TRMM-3B42

What will you learn if you work in my lab:

- Atmospheric science
- Statistics
- Computer programming



What types of students have succeeded in my lab group in the past:

- People who like math, and are self-motivated, chill, and willing to sit in front of a computer for 1 hour at a time.