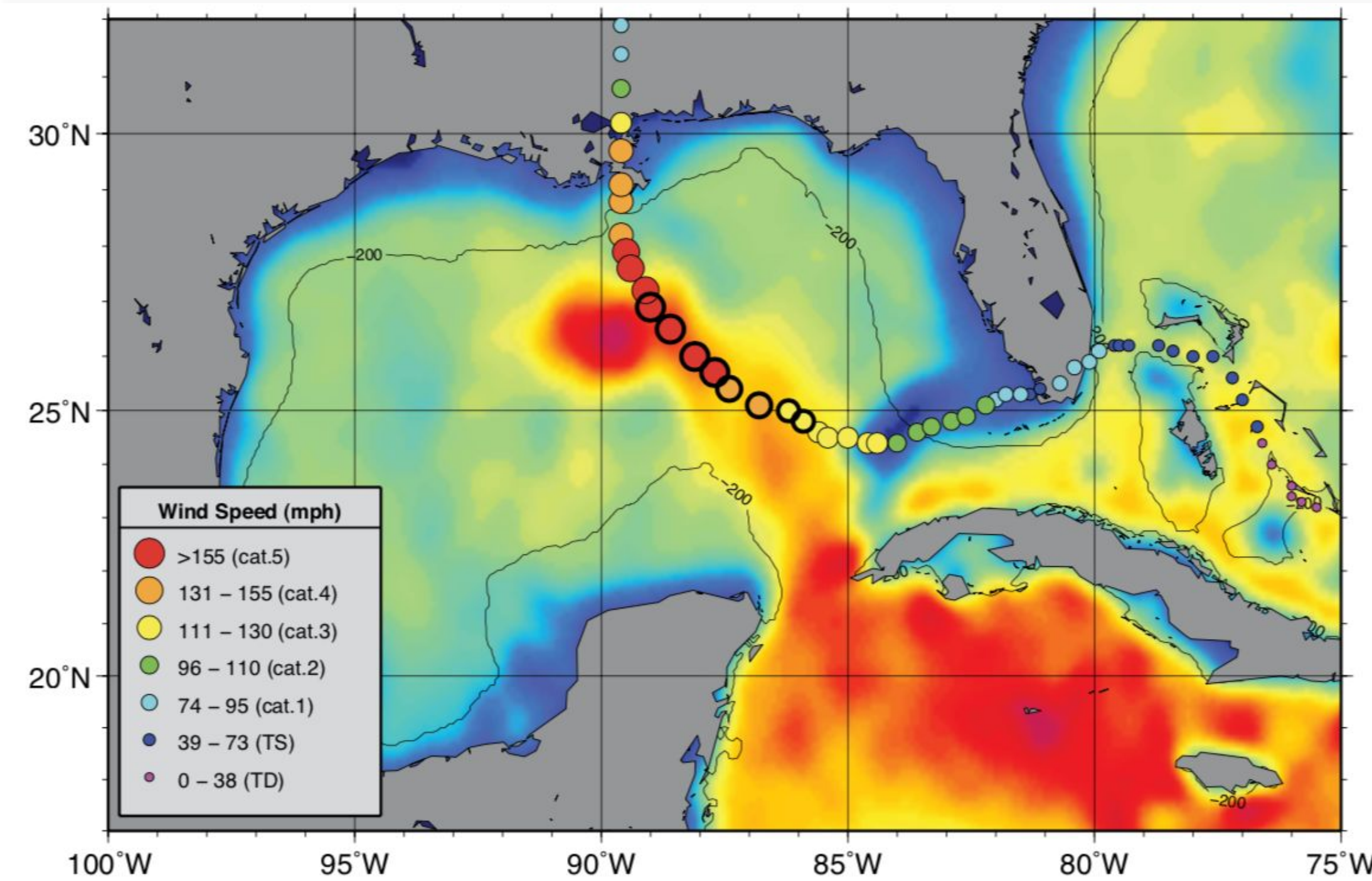# Oceans Observations and Hurricane Forecasting

Matthieu Le Henaff (PhOD), Lev Looney (PhOD/CIMAS), Greg Foltz (PhOD), and **Many Others**
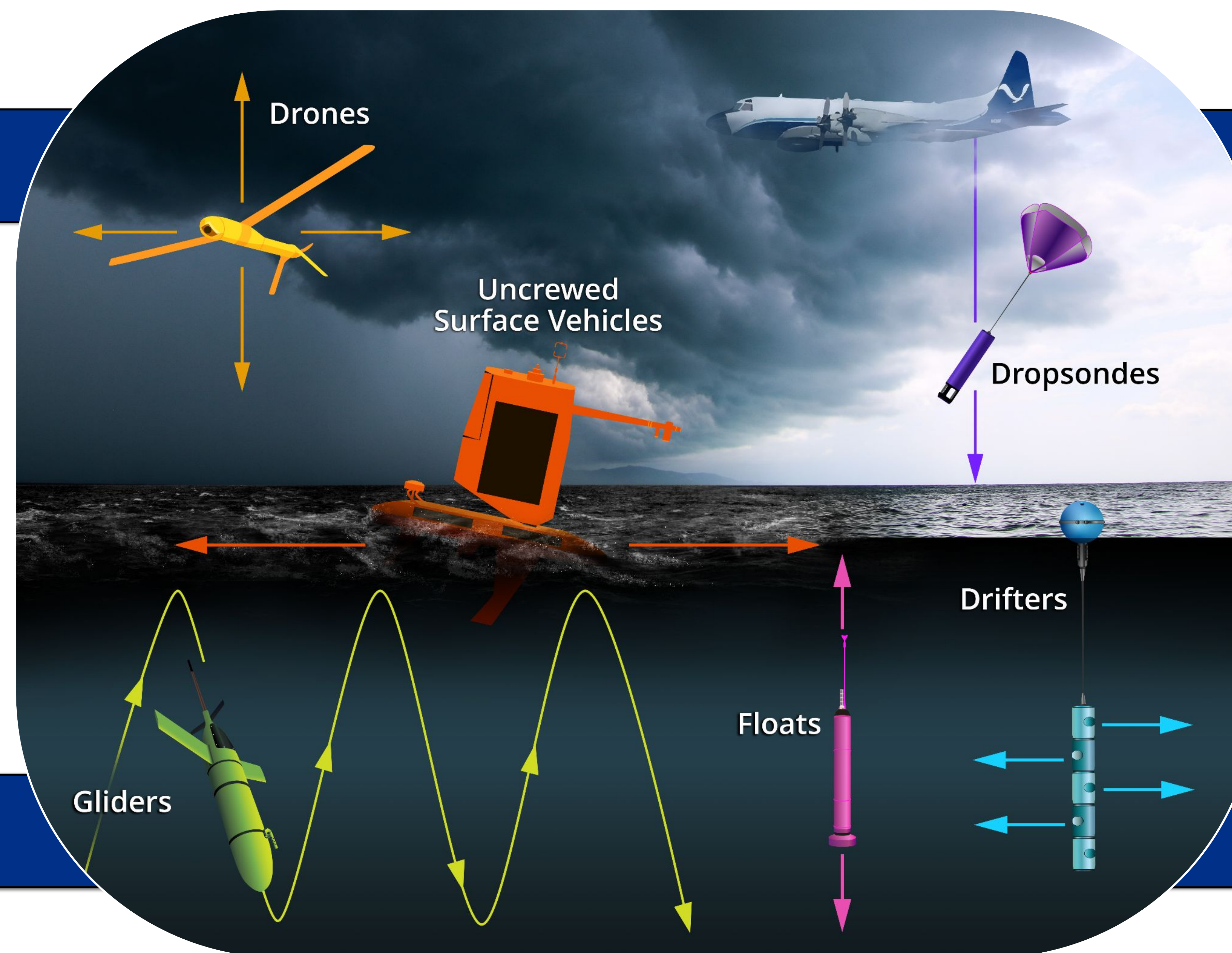
The ocean impacts weather extreme events

- The **oceans impact Tropical Cyclone evolution**, e.g., Katrina (2005)
- **Sea Surface Temperature** and **ocean vertical structure** are key
- **Hurricane models** must account for **correct representation** of the **ocean**
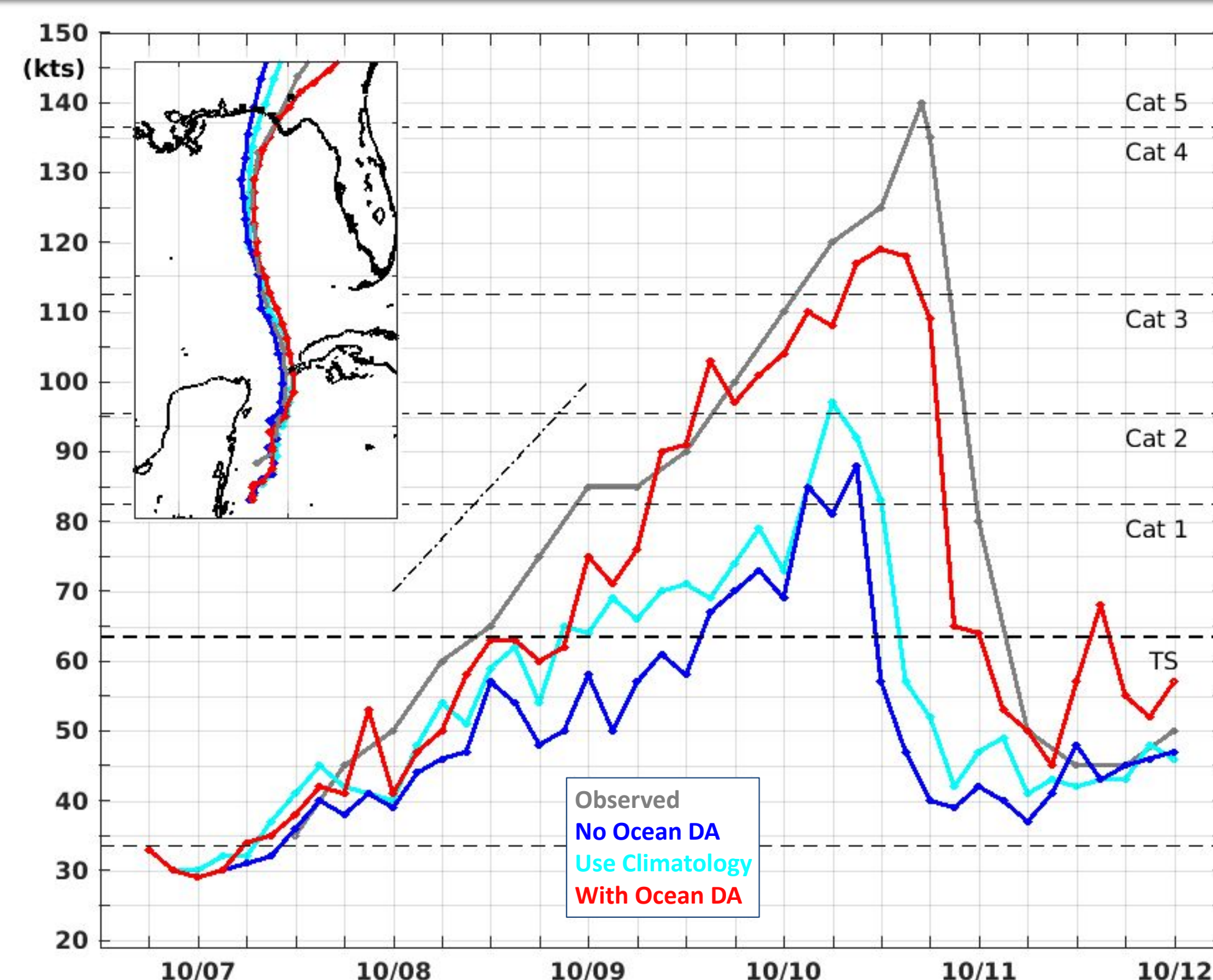

How do we do that?

- Ocean models **assimilate observations**
- **Coupled ocean-hurricane models** for forecasts

Challenge

- *In situ* **observations** of the **ocean** are needed
- *In situ* + hurricane = **very difficult** ($\Rightarrow$ expensive)

Does it work?

Realistic ocean conditions lead to **better hurricane forecasts**, e.g., Michael (2018)

What's exciting?

Co-located deployment of atmospheric and ocean observations:

⇒ *Better understanding, better models*

⇒ *Coupled data assimilation*