1 Introduction

In this assignment we will study the structure of tropical cyclones and compare them to the extra-tropical ones, using data from hurricane Wilma.

Wilma developed into a powerful cat 5 hurricane over the Gulf of Mexico, badly affecting the Yucatan peninsula - see Fig.1. It then moved north-east over Florida and the east coast of the US, transitioning into a strong extra-tropical cyclone - see Fig2.

2 Structure of a tropical cyclone (e.g. hurricane)

Choose a time when Wilma was at its peak and plot:

a) height and wind at chosen pressure levels throughout the troposphere
b) absolute vorticity at the same pressure levels.

C) zonal and meridional sections (cross sections) across the hurricane, showing temperature, wind and vorticity.

Comment on the hurricane vertical structure.
3 Structure of an extra-tropical cyclone

Repeat the above but for a later time when Wilma had transitioned into an extra-tropical cyclones.

How different is the structure of the cyclone at this later stage from the early one?