THE UPPER-LEVEL STATIC STABILITY AND TROPOPAUSE STRUCTURE OF TROPICAL CYCLONES

by

Patrick Timothy Duran

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ABSTRACT

We did some research and wrote about the results.

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1.1 Section Heading

I can reference a section using the label, for example: Section 1.

1.1.1 Subsection Heading

2. The tropopause-layer static stability structure of tropical cyclones: Idealized modeling

2.1 Introduction

The preceding two chapters highlighted the effect of tropical cyclones on the tropopause and upper-level static stability structure in dropsonde observations. These observations alone, however, cannot explain the mechanisms that force the observed variability. Numerical simulations of an axisymmetric hurricane conducted in an idealized framework reproduced the observed variability. Using these simulations, some physical insight into these mechanisms is obtained and described in the present chapter.

2.2 Model Setup

The numerical simulations were performed using version 19 of Cloud Model 1 (CM1) described in **?** and available online at [WEBSITE]. The fully-compressible, axisymmertic equations of motion were integrated on an Arakawa C-Grid with 1-km horizontal and 250-m vertical grid spacing using a 3rd-order Runge-Kutta split time integration scheme and 5th-order spatial differencing. Sub-grid turbulence was parameterized using a Smagorinsky scheme with prescribed horizontal and vertical mixing lengths of 1 km and 100 m, respectively. The model domain was 6000-km wide and 35-km deep with a Rayleigh damping layer applied to horizontal and vertical momentum outside of the 5000-km radius and above the 25-km level to prevent spurious gravity wave reflection at the model boundaries. Microphysical processes were parameterized every advective time step using the Thompson microphysics scheme **?** and radiative heating tendencies were computed every two minutes using the RRTMG [CITATION] longwave and shortwave schemes.

You can use footnotes.[1]

[1] Here is a footnote.

BIBLIOGRAPHY