Tropopause Evolution in a Rapidly Intensifying Tropical Cyclone: A Static Stability Budget Analysis

Patrick Duran* and John Molinari

University at Albany, State University of New York, Albany, NY

Corresponding author address: Department of Atmospheric and Environmental Sciences, University at Albany, State University of New York, 1400 Washington Avenue, Albany, NY.

E-mail: pduran2008@gmail.com

ABSTRACT

Enter the text of your abstract here.

To assess how well the budget captures the observed static stability variability, 24-hour changes in static stability are computed at every grid point in the domain shown in Fig. 2 and compared to the changes indicated by the budget equation. Probability density functions (PDFs) of the absolute value of these static stability changes are plotted in Fig. 3 for each of the first four days of the simulation. The PDFs of the budget changes over these 24-hour periods (Fig. 3, orange lines) closely follow those of the model changes (Fig. 3a, red lines). Meanwhile, the vast majority of grid points in the region exhibit residuals near zero (Fig. 3a, blue lines). The similarity between the PDFs of the model and budget changes, together with the near-zero residual values, indicates that the budget performs well in the tropopause layer, and can be used to assess the changes in static stability during these time periods.

Acknowledgments. Start acknowledgments here.