

Homework 4

due Sept. 25, 2015

[50 pts.]

Name: _____

Estimate of Time Spent: _____ Actual Time Spent: _____

Problem 1: Professor for a day

For this assignment, **you** are the professor. You have been tasked with teaching 20 Civil Engineering masters students the Coriolis and Centrifugal effects in the context of atmospheric science. Note that these are intelligent students with strong math and physics backgrounds - they just don't typically deal with the large-scales that you do, so, rotation never comes into the picture.

For your lecture, you will prepare a slide show (e.g. Powerpoint, Keynote, etc.) of 15 slides or fewer on the Coriolis and Centrifugal effects. For these slides, your main goal is not to just present the derivation of these terms in a rotating reference frame, but also to provide your students with *why* the terms are what they are - that is - to impart physical intuition. Finally, you may want to include real-world examples to convince the students that these terms actually matter (or don't matter). Finally, I would like a "script" to go along with your slides (no need for complete sentences if you don't want - bullets are fine).

Additional Comments:

- *While many resources online like to use a merry-go-round as a learning tool, note that a merry-go-round is not a sphere, and thus, this example will only get you so far!*
- *I would like your slides and script emailed to me¹ (with Marie cc'd²) in pdf format. I repeat, I want everything in a pdf! If you use Powerpoint and you use layered animations, you will need a separate slide for each layer since Powerpoint will not "print each stage of builds" to pdf. Keynote will.*
- *You will not be asked to present your slides in class, however, if I really like your approach I may ask your permission to use your materials in subsequent years.*

¹eabarnes@atmos.colostate.edu

²mmcgraw@atmos.colostate.edu