Review for Examination 3

This exam is a bit different from the other two since the course material is different and no longer is focused on mesoscale phenomena (at least after MCCs and MCVs were covered). I will still NOT expect you to derive equations like the Radar Equation or prove why closure is needed using all of the math equations. But you should understand the concepts that relate to use of radar, or its design, along with the rather specific items related to model design, such as discretization.

The following is a list of phenomena that have been discussed in class so far which could appear on Test 3, along with details to know. Note that since MCCs/MCSs are such an important phenomena that this material may again appear even though some of it appeared on Exam 2.

- Mesoscale Convective Complexes or systems – how do LLJs affect these, what are conditions typical for formation, how do they evolve?
- Mesoscale Convective Vortices – when do these form, why, and what is their importance?
- Radar Meteorology – how does a radar work, what is anomalous propagation, reflectivity, Doppler velocity, Dual-pol moments? What are the design issues like unambiguous range and maximum unambiguous velocity.
- Numerical methods – what are types of models exist, what are required and desirable properties of numerical methods, issues to face when designing a model (grid, staggering, discretization, etc)
- Closure problem – what is it, how is it dealt with