

## Outline

- 0. Why does the atmosphere convect?
  - a. IR-cooled air, sun-heated surface
  - b. Chaos, luck, and natural selection
  - c. Asymmetry of cloudy convection
  - d. Observability and cognitive biases
  - e.
- 1. Keeping track of stuff in boxes
- 2. Good enough equations
  - . Fluid dynamics
  - a. Thermodynamics of moist air
  - b. Averaging: bookkeeping and its interpretation
- 3. Buoyant bubbles: finite size and geometry
  - . Evading BPGF, the enforcer
  - a. Escaping mixing, the dissolver
  - b. Interactions with DPGF
- 4. The stratified environment
  - . Up moist, down dry
  - a. Vertical scale and horizontal speed
- 5. Inertia of long horizontal flows
  - . divergent
  - a. rotational
- 6. Putting it all together: phenomena
  - . Multiscale convection vs. scale interaction
  - a. Squalls and fronts
  - b. Wave-convection interaction
- 7. Afterword

