Tropical Meteorology - General Outline

1. **Radiative-Convective Equilibrium**
   - 1.1. General principles of radiative transfer
   - 1.2. Simple models without phase change
   - 1.3. General principles of moist convection
   - 1.4. Simple models with phase change
   - 1.5. Quantitative assessments of the equilibrium state - comparisons to observations

2. **The Zonally-Averaged Circulation**
   - 2.1. The observed climatology
   - 2.2. Breakdown of the radiative-convective equilibrium state
   - 2.3. Dry theory
   - 2.4. Moist theory
   - 2.5. Regulation of intensity

3. **Asymmetric Steady Circulations**
   - 3.1. Monsoons
     - 3.1.1. Development and onset of the Asian monsoon
     - 3.1.2. Monsoon breaks
     - 3.1.3. Nonlinear, asymmetric theory
   - 3.2. The Walker Circulation
     - 3.2.1. Observations
     - 3.2.2. Theory

4. **Interannual Fluctuations of the Walker Circulation – ENSO**
   - 4.1. Observed behavior
   - 4.2. Theory and modeling of ENSO

5. **Intraseasonal Oscillations**
   - 5.1. Observations
   - 5.2. GCM simulations
   - 5.3. Theory of equatorial waves
     - 5.3.1. Dry
     - 5.3.2. Moist
   - 5.4. WISHE
   - 5.5. Cloud-radiation interactions and ISOs

6. **Higher Frequency Disturbances**
   - 6.1. Monsoon depressions
   - 6.2. Equatorial waves
   - 6.3. Easterly waves

7. **Tropical Cyclones**
   - 7.1. Structure and climatology
   - 7.2. Steady-state physics
   - 7.3. Genesis
   - 7.4. Ocean interaction