**EVALUATION METHODOLOGY**

- **Surface wind regime according to KSC/CCAFS wind-tower observations.**
- **Observed t-storm days according to data from a local lightning surveillance system during 1500–2300 UTC on grid 4 only.**
- **Forecast t-storm days determined by minimum RAMS vertical velocity at 7 km and sfc. rain rates ≥ 5 mm h⁻¹ on grid 4. (Refer to Case et al. companion poster.)**
- **Verify RAMS errors at KSC/CCAFS wind-towers for:**
  - Each surface wind regime.
  - Each t-storm contingency table element.
  - Compute error statistics:
    - **RMS error:** \[ \text{RMS error} = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (\Phi' - \Phi)^2} \]
    - **Bias:** \[ \text{Bias} = \frac{1}{N} \sum_{i=1}^{N} \Phi' \]
    - **SD:** \[ \text{SD} = \sqrt{\text{RMS}^2 - \text{Bias}^2} \]
    - where: \( \Phi' \) is the forecast minus the observed value, and \( N \) is the sample size.

**RESULTS:**

- **1200 UTC FORECAST**
  - **Surface Wind Regime Errors**
    - Largest random T errors under westerly surface flow.
    - Greatest cold bias under light and variable wind regime.
    - Westerly flow yields largest random u-wind errors.
    - Errors in sea-breeze position.
    - Frequent convection / outflow boundaries with west winds.
    - Largest wind direction errors during nocturnal and early morning hours under light and variable wind regimes.
    - Maximum daytime wind direction RMS errors under westerly flow.
  - **Thunderstorm Regime Errors**
    - Convention of contingencies:
      - YY = Forecast + Obs.
      - YN = Forecast + No Obs.
      - NY = No Forecast + Obs.
      - NN = No Forecast + No Obs.
    - Largest RMS errors when RAMS forecasts t-storms.
    - Largest random T errors on days with observed t-storms.
    - Observed t-storm days yield the largest u-wind errors and wind-direction RMS errors.