

San Francisco State University  
Department of Earth & Climate Sciences

Name \_\_\_\_\_  
Spring 2018

ERTH 260--Inclass Exercise #14: Student Discussion of the Afternoon Meteorological Environment Associated with the Joplin Tornado (100 points)

Presentations: Friday 11 May 2018

Students will be selected by lot to work in teams.

Each team will discuss aspects of the afternoon meteorological environment and unfolding weather pattern in the last few hours before and during the Joplin tornado.

Each team will present a narrative based upon what we've learned in class are the ingredients of the severe thunderstorm environment in the Great Plains associated with the typical weather pattern. Each student should plan on speaking around 3 minutes on the aspects the Team decides upon, as a group.

The Teams should make certain there is coordination between the groups. For example, the evolution of the CAPE and dew point environment will clearly relate to the surface weather maps. The development of cumulonimbus should relate to the dry line position and the removal of CIN. Etc.

Please turn in this sheet with your name on it, and circle the group of which you were a part.

Team 1: Surface Environment Evolution (Wyndham, Emma, Kellen)

Team 2: Instability and Shear Environment Evolution (Nicolas, Linda, Allen, Cynthia)

Team 3: Radar and Satellite Evolution (Rami, Yan Tung, Tanay)

## **Inventory of charts and graphics:**

### Surface and Upper Air plots:

22 May 2011 (UTC): 1200, 1600, 2200, 0000 (23 May 2011)  
Surface isobars, dew points and winds (animation)  
300 mb: 1200 UTC and 0000 UTC

### Soundings:

Oklahoma City OK (1200 UTC 22 May and 0000 UTC 23 May)  
Springfield MO (1200 UTC 22 May and 0000 UTC 23 May)  
Animation: Oklahoma City Sounding, morning afternoon  
Animation: Springfield Sounding, morning afternoon  
CAPE/CIN Animation

### Shear:

Springfield MO 12 UTC hodograph  
Animation: 0-6 km Layer (Deep) Shear  
Animation: 0-3 km Storm Relative Helicity

### Radar and Visible Satellite:

#### Animation

½ Degree Tilt Reflectivity and Storm Relative Velocity  
Storm Reflectivity with Debris Ball and Tornado Vortex Signature  
1/2 km Visible Satellite Animation  
1 km Visible Satellite Animation