Meeting Preview

Monday morning — Gobs of information

- overview, communication and coordination
- individual team objectives and strategies

Monday afternoon — Deployment strategies

- breakout sessions then group discussion

Monday evening — Dinner at Center for Severe Weather Research

Tuesday morning — Forecasting and support

Issues raised by PIs

Data management

Logistics and action items

VORTEX2 Calendar (2009)

May 4	PI access to Natl. Weather Center (Norman)
TBD (by individual teams)	Training, dry runs for individual teams
May 6 - 9	FC ⇔ team communications tests
May 7	CPR training in Norman
May 8 (morning)	Media day in Norman
May 10 (morning)	Travel to target area / dry run
June 13 or earlier	Last operations day
June 15 or earlier	PI meeting in the field (year 1 review, preliminary analysis plans)
late Oct / early Nov	VORTEX2 research workshop (2 days? Penn St?)

VORTEX2 Calendar (2010)

* May 1 — Travel to target area / dry run
* June 15 or earlier — Last operations day
* June 17 or earlier — PI meeting in the field
  (year 2 review, preliminary analysis plans)

October — VORTEX2 research workshop

* Current funding permits a 3-week field phase in 2010, from May10-May 31. However, we are hoping to extend operations to 6 weeks through cost savings and/or additional funding.

Science Objectives

- Tornadogenesis
- Near-ground winds in tornadoes
- Relationships between supercells and their environments
- Storm-scale numerical weather prediction
- Getting Roger out of his office and back into the field

We will set up deployments for the tornadogenesis objective whenever possible.

(The period of greatest interest is from a few tens of minutes before the tornado forms until the first several minutes of the tornado's life.)

Logistics of a Fully Mobile VORTEX2

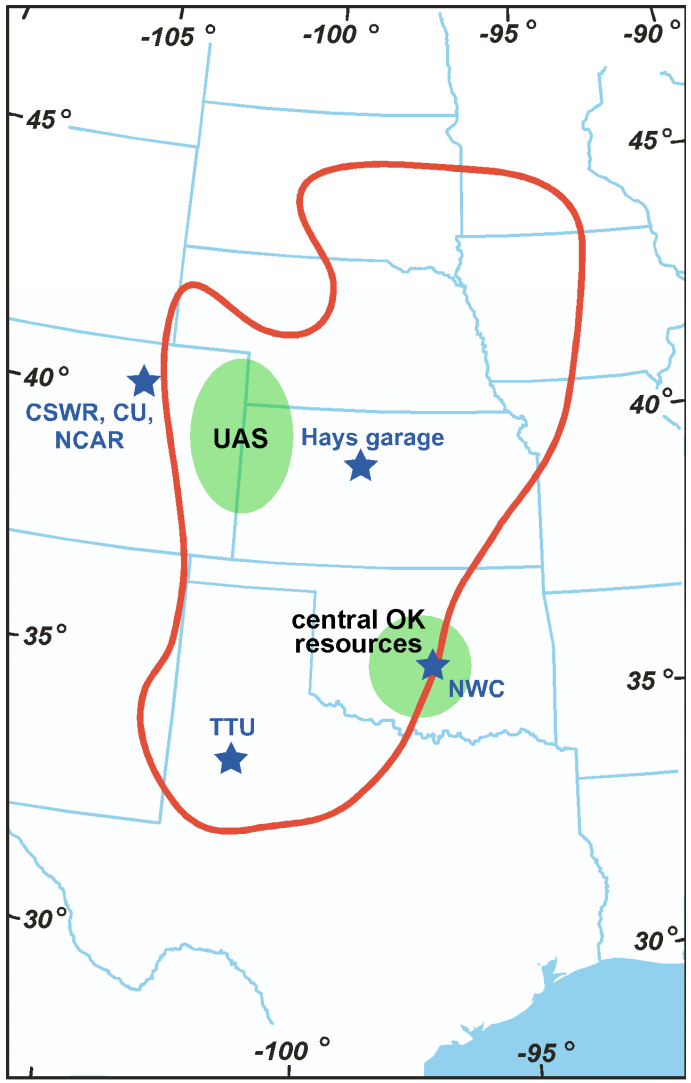
~40 vehicles ("armada")

~50 hotel rooms each night

~900 miles from south to north edge of domain

35 days per season (May 10 - June 13)

- ~12 operations days
- ~6 travel days
- ~9 stationary days
  - standby but no ops
  - maintenance, mission reviews
  - assist with damage surveys?
- ~8 down days
  - seeing the sights: Big Texan steak ranch, world's largest prairie dog



VORTEX2 Coordination Philosophy

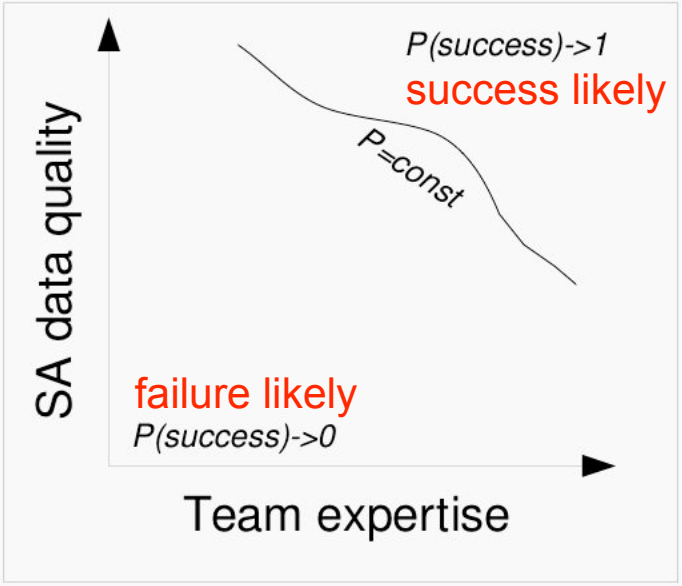
VORTEX1 paradigm: central command

- Field Coordinator determined deployment locations.
- In practice, only a subset of vehicles could be coordinated or monitored.

VORTEX2 paradigm: collaboration of semi-autonomous teams

- Field Coordinator provides general guidance.
- Team leaders plan and implement instrument deployments.
- "Let trained experts do their jobs."

SA="Situational Awareness"



Field Coordinator (FC) Guidance

- Situational Awareness (SA)
  - Vehicle locations
  - Current storm information (including hazards)
  - Storm forecast (locations, tornado potential)
- Target selection
  - Before operations: region, approx. time period; updates every 30/60 min
  - During operations: storm, time period, domain
- Routing
  - Road recommendations (when possible)
  - Limits for how far teams should proceed
- Facilitating discussion among the teams
  - Weather
  - Deployment strategies
- Hotel and day 2 information

Timeline of a Full Operations Day

8:00 am	Individual forecasting	
9:00 am	Steering committee meeting	
10:00 am	Weather and mission discussion	Vehicle preparation
11:00 am	Departure from hotel	
noon	Ferry to target area	Refinement of day 1 target
1:00 pm	“ ”	Refinement of day 2 target
2:00 pm	“ ”	Determination of hotel location
3:00 pm	“ ”	Refinement of day 1 target
4:00 pm	Positioning downstream of developing storms	
5:00 pm	Storm selection, start of deployment	
6:00 pm	Data collection	
7:00 pm	Data collection	
8:00 pm	End of operations, start of travel to hotel	
9:00 pm	Ferry to hotel	
10:00 pm	Arrival at hotel	

FC announces on previous day if schedule will be shifted/compressed.

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most dangerous part of mission

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VORTEX2 Forecasting and Mission Planning

- Steering committee meeting (9:00 am)
  - Bluestein, Burgess, Dowell, Markowski, Rasmussen, Richardson, Wurman, Wicker (participation via video chat from Norman)
  - Discussion of weather and mission scenarios, development of initial game plan
- Weather and mission discussion (10:00 am)
  - Steering committee + team leaders + students
  - Weather overview (~10 minutes; university team presents?)
  - Discussion of today's mission (~20 minutes)
    - Target region, fast- or slow-storm mode
  - *"Mission scientist of the day" (rotating schedule) makes final decisions when no group consensus is reached*
- Forecasting and nowcasting support from National Weather Center (more details tomorrow)
  - Text chat with FC throughout the day

The success of the morning meetings depends on PIs arriving with informed opinions about the weather, based on having looked individually at data before the meetings.

Getting to the Target Area

A 40-vehicle convoy is neither feasible nor desirable.

- We don't want to create our own traffic jams.
- Most of the towns we'll be passing through can't support 40 vehicles fueling and/or 100 people eating at once.
- Maintenance and preparation times vary (day-to-day, vehicle-to-vehicle).
- Sounding teams will often operate on a slightly earlier schedule.

We need to be efficient.

- staggered departure, arrival, fueling, and eating times
- awareness of vehicle locations through SASSI (next presentation)
- fueling etiquette (larger vehicles first, moving away from pumps when finished, etc.)
- keeping total number of miles within our budget

Weather and target updates are needed regularly (every 60 or 30 minutes?) as we move to the target and then set up in our storm-relative locations.