Genesis Modules (Draft 1)

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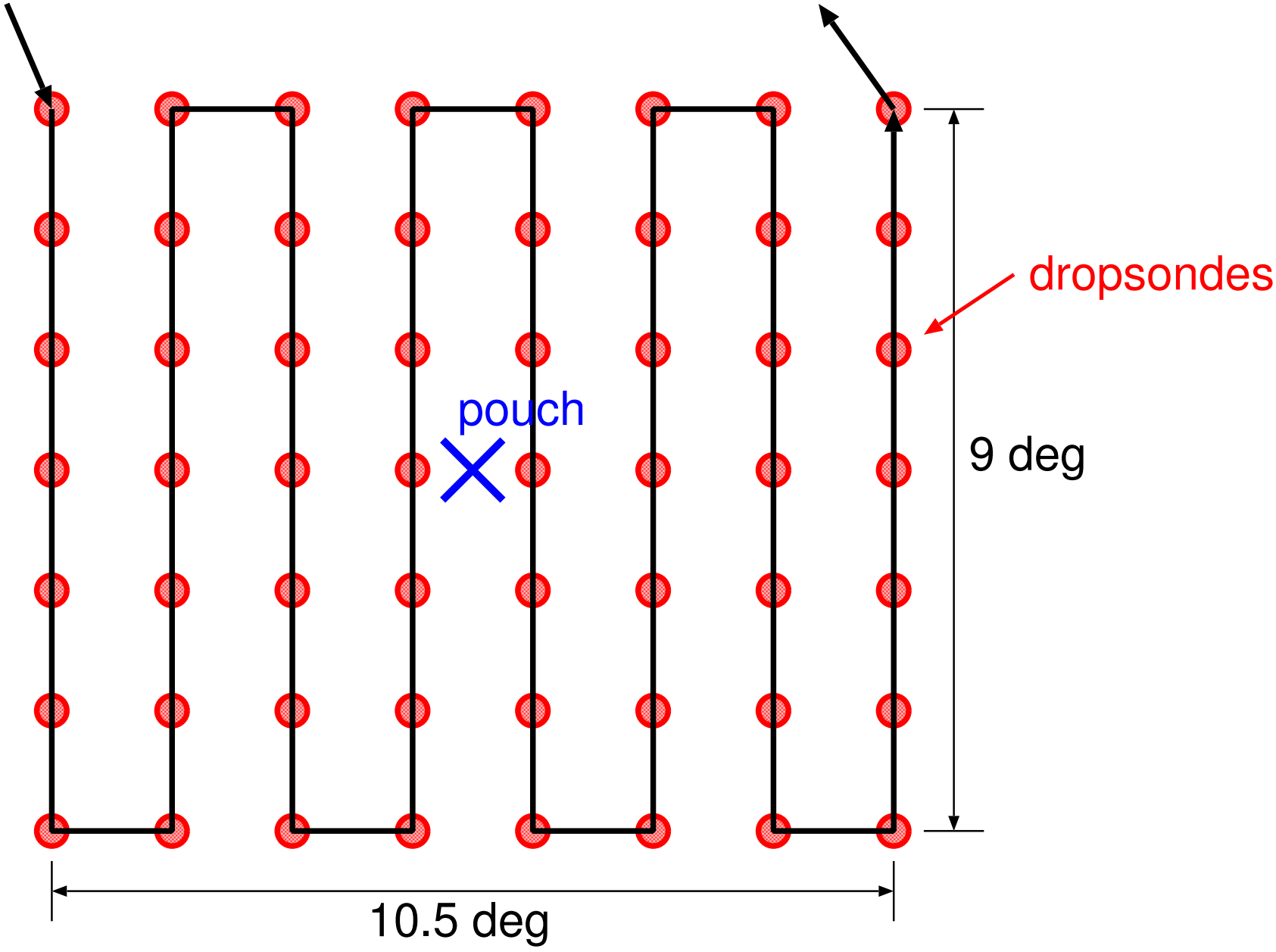
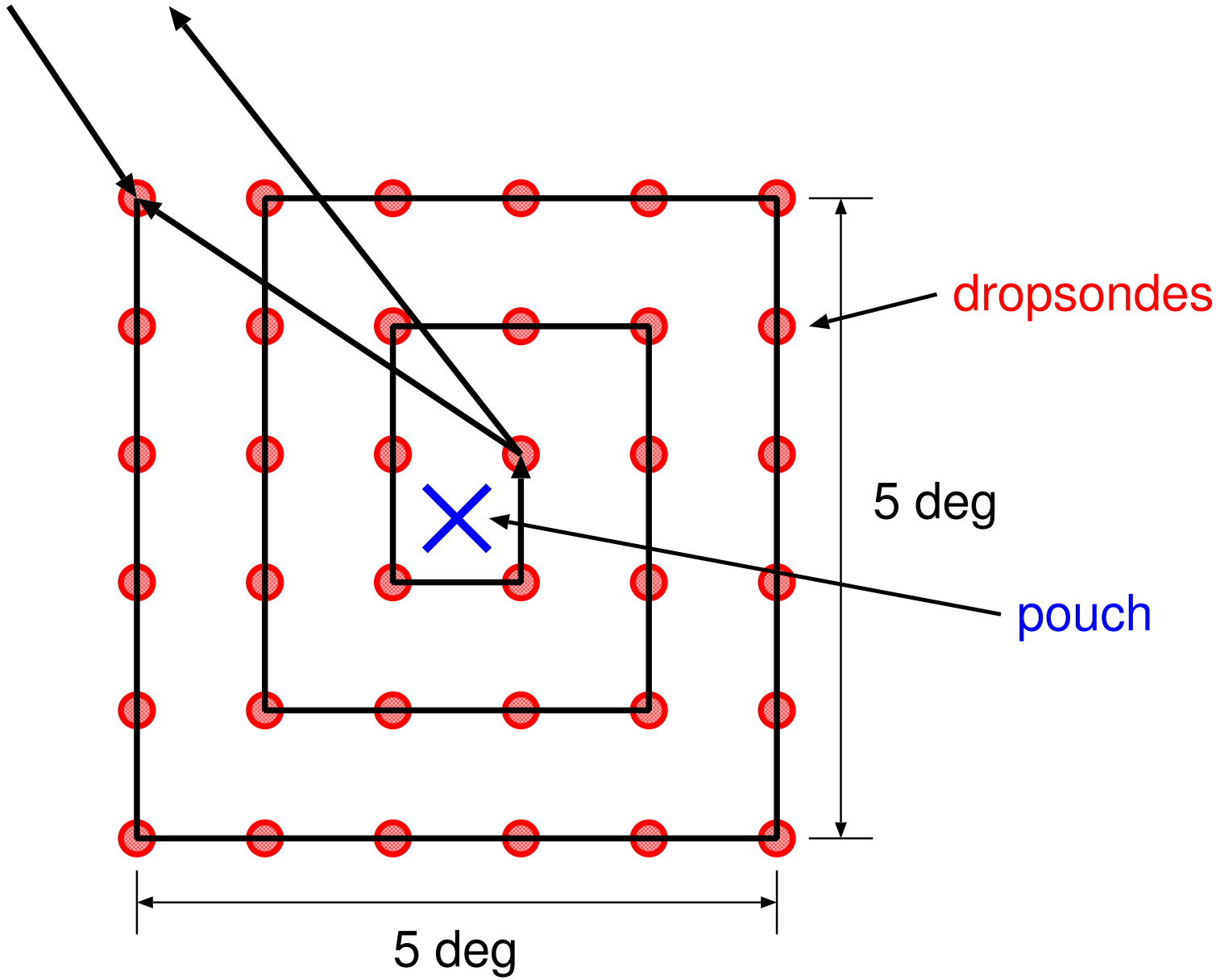
Pre-depression AV-6 module



Pre-depression AV-6 module

- Overall objectives: Characterize pre-depression disturbance and obtain dropsondes for model initialization. Obtain patterns of humidity, stability, and vertical mass flux. Compute vorticity budget.
- Conditions for execution: Presence of a wave or other pre-depression disturbance that is a candidate for intensification. Flyable domain must be large enough to accommodate pattern, which should be centered on the predicted pouch.
- Limited on-station time: As drawn, this takes about 14 hr on station. Eliminating two NS legs reduces this to about 10 hr. Reducing NS extent to 7.5 deg would help further.
- Dropsonde plan: As shown, 1.5 deg resolution.

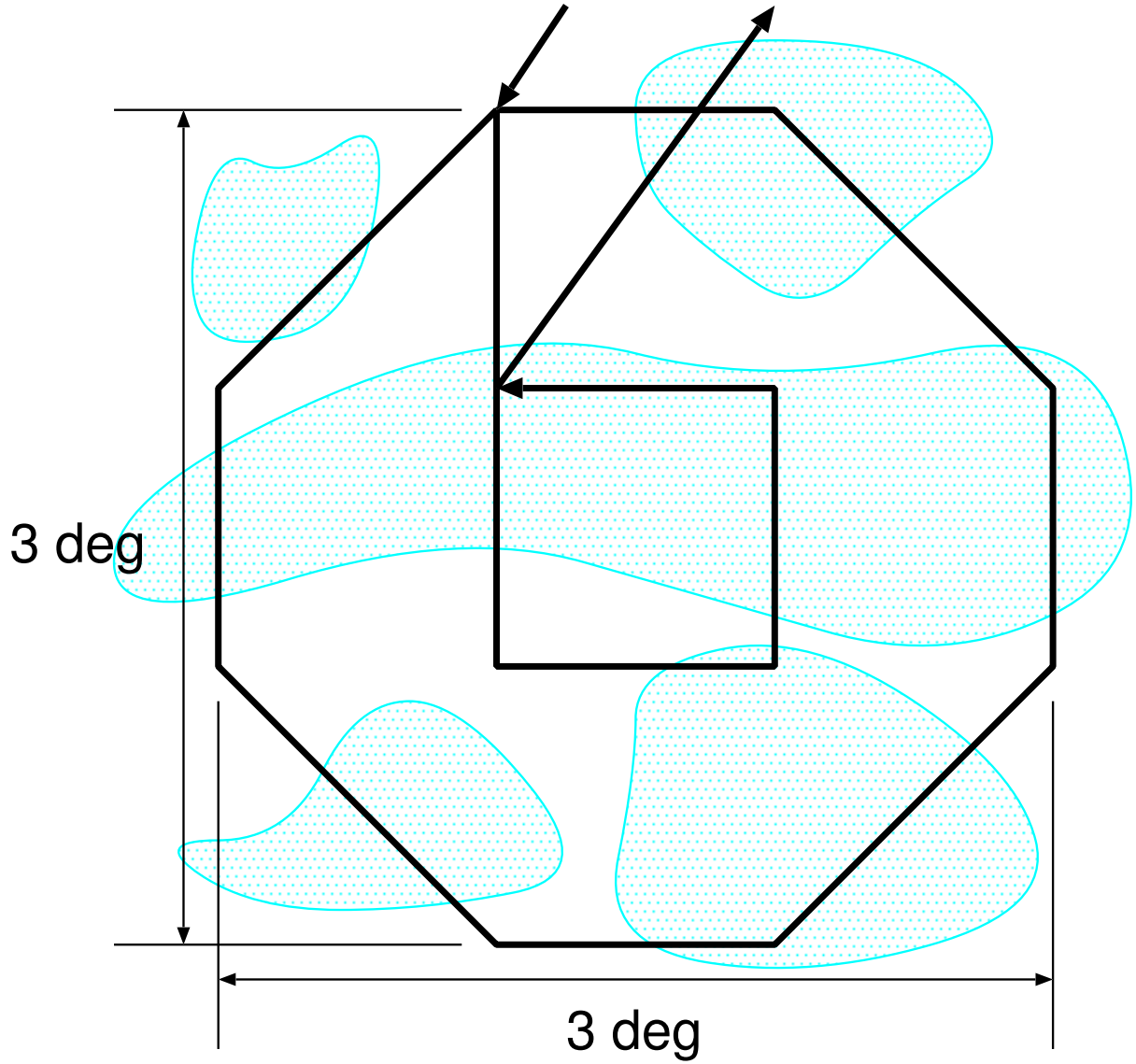
Tropical depression AV-6 module



Tropical depression AV-6 module

- Overall objectives: Characterize tropical depression and compute vorticity budget. Obtain patterns of humidity, stability, and vertical mass flux.
- Conditions for execution: Presence of a well-defined tropical depression. Flyable domain must be large enough to accommodate pattern, which should be centered on the predicted pouch.
- Limited on-station time: As drawn, this pattern takes about 6.3 hr to traverse, including ferry back to initial point. If time allows, the pattern should be flown twice.
- Dropsonde plan: As shown, 1 deg resolution.

AV-1 convective module



AV-1 convective module

- Overall objectives: Characterize large and persistent convective systems at all stages of genesis. Use HIWRAP radar to map wind field and HAMSR to obtain (low vertical resolution) thermodynamic fields.
- Conditions for execution: This mission should be flown after all AV-6 missions for which the expected target area remains over accessible water. Need airspace box with freedom to roam within the box. Targets nearest the predicted pouch (Montgomery) and to the south and east of the pouch (Elsberry) should have highest priority.
- Limited on-station time: The illustrated plan should take about 2.5 hr. However, this plan is purely schematic. The same or different convective systems should be flown successively given the time available. Given the fluidity of convection, pattern changes on the fly will be needed.