



Aerodynamic principle behind vortex seeking formation flight

Problem Statement

- Extend ARSENL swarm infrastructure to demonstrate tight formation flight for the purposes of reduced energy, extended endurance and deception.
- Modify existing hardware and software to minimize latency and improve precision to test the bounds of GPS navigation
- Add hardware for image-based or other relative-position sensor perception
- Perform flight experiments to evaluate limits

Impact

- Potential to improve range, endurance, and time on station for UAV swarms in tactical applications
- Natural application of ARSENL swarm infrastructure, progressing into areas of practical application
- May be used as a form of adversarial deception, masking a swarm of UAVs as something else

Transition

- Already have a partnership in place with researchers at Georgia Tech
- Extended team invited to socialize the project with several groups at NASA this fall
- Adds practical application to technology already developed by NPS-ARSENL, improving marketability of the technology