



Simulated Use of Networked Satellites for Space Situational Awareness

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Computing / DSSI

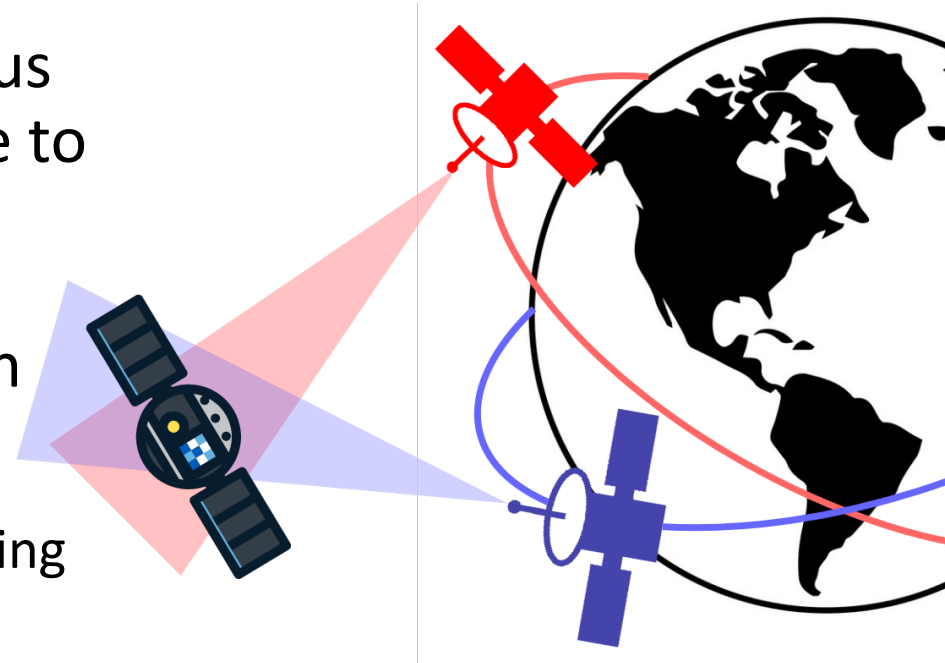
Imene Goumiri, Michael Schneider, Julia Ebert





Tracking Satellites is Important for National Security

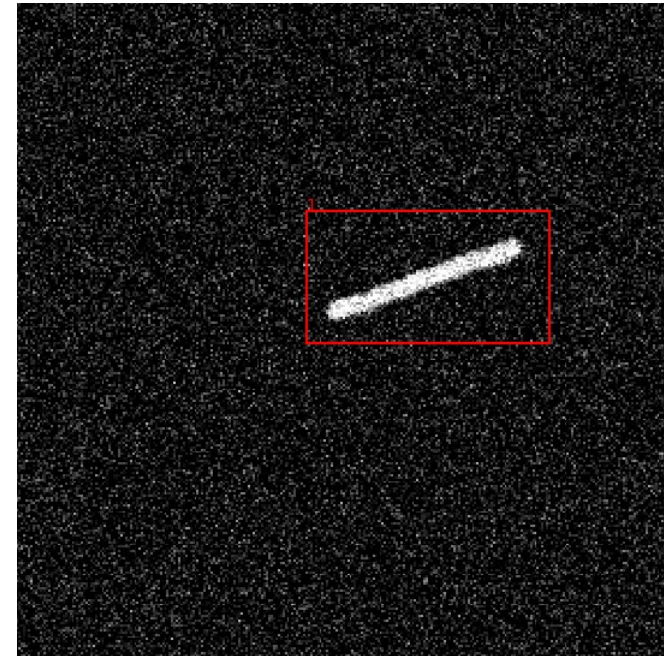
- Tracking satellites is a core component of Space Situational Awareness
- A constellation of autonomous small satellites would be able to quickly and accurately determine orbits and has advantage of decentralization
- Summer Goals:
 - Fix, update, and improve existing code
 - Implement a sensor scheduling strategy





Orbital Determination Strategy

- System Architecture
 - Satellites
 - Communication Channels (socket based)
 - Hub
- Algorithm
 - Observe
 - Determine
 - Filter
 - Broadcast
 - Receive & Incorporate

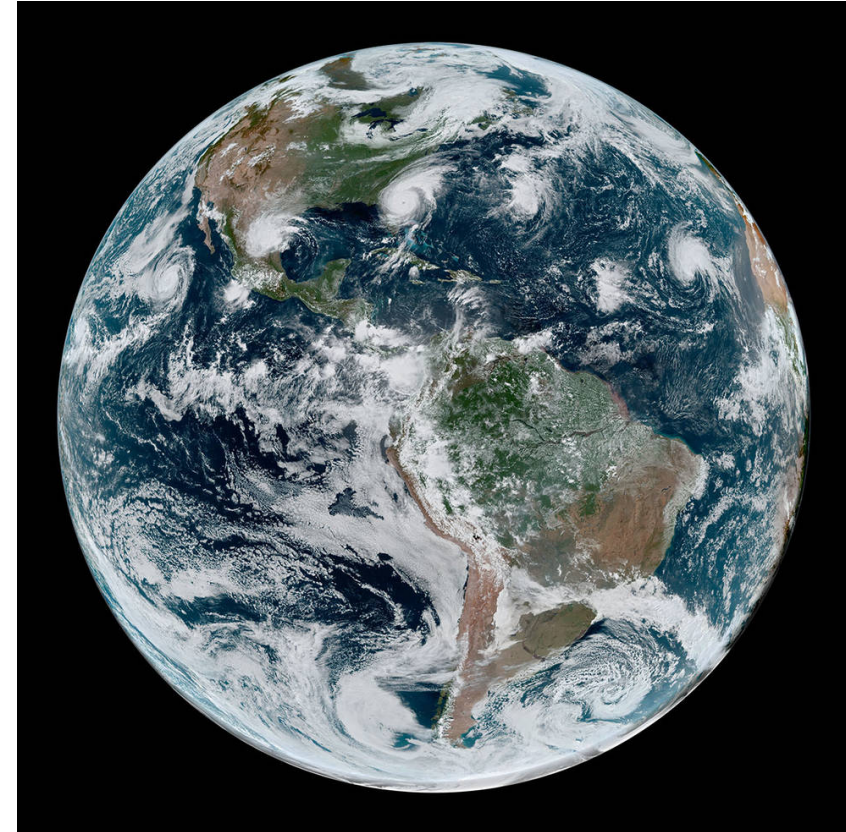


A simulated satellite streak



Next Steps

- Integrate a sensor scheduling strategy
 - Plan to implement Logothetis & Isaksson (1999)
 - Optimality of open-loop control for the sensor scheduling problem of linear Gauss Markov systems
 - Physical constraints may affect optimality
 - Solar occlusion
 - Earth occlusion
 - Earth's shadow





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