

Norman Fitz-Coy

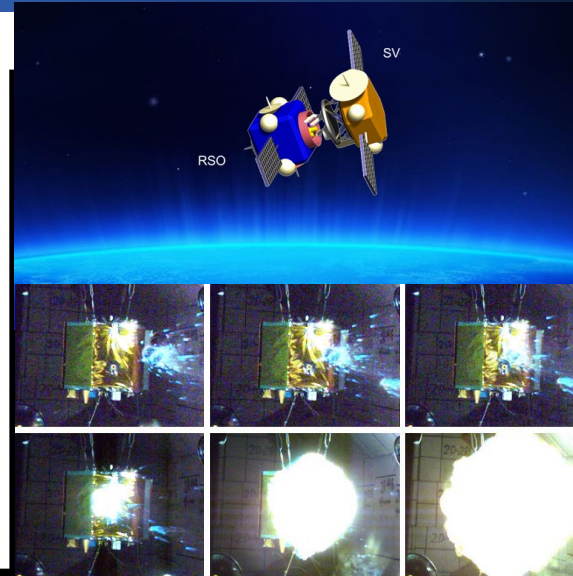


Research Objectives and Key Challenges:

- Develop methodologies and applications to enable future space applications
- Applications of new methodologies to space debris mediation and/or remediation

Significance of Work:

- Enabling capabilities to ensure safe operations of next generation space systems in a “hazardous” environment
- Enabling technologies for shared resources across distributed space systems



High-Level Technical Approach:

- Game theory based methods
- Switched systems methods (leveraged)

Potential AFRL Collaboration Areas:

- Attitude control systems
- Space operations
- Adaptation on-orbit due to situational changes

Center Research Areas:

- Adaptation, Optimality, and Synthesis
- Network Systems

Recent Accomplishments:

- ✓ Developed strategies and hardware for rapid retargeting and precision pointing for small satellite applications
- ✓ Developing a database of space debris fragments to enable better characterization of their lethality during collision
- ✓ Developing technologies for deployable CubeSat applications

Current Funding:

- AFOSR, AFRL, NASA, Florida Space Grant Consortium, and industry

Short-Term Research Vision:

- Develop game theoretic strategies for guidance and control of non-cooperative dynamical systems
- Development of methodologies for space situational awareness through improved debris environment modelling