Project and Team:

Electronically Controllable Metasurface Omnidirectional and Multiple Access Optical Antennas for Free-Space Near-Earth Satellite Communication

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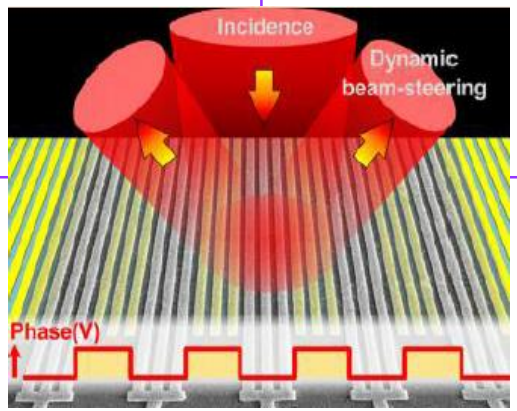
Research Objectives:

- Create Fully Electronic Omnidirectional Optical Antennas; no moving parts
- Innovation: Chip-based Metasurface Optical Phased Arrays

Approach:

- Design, Fabricate and Test Tunable Metasurface Beam-Steering Phased Arrays
- Integrate Metasurface Phased Arrays into Omnidirectional and Multi-Access Antennas



Actively tunable reflectarray metasurfaces open the door to chip-based electronic beam steering systems for laser communications

Potential Impact:

- Ultracompact, Low SWaP Omnidirectional Antennas
- Fully Electronic Multiple Access Optical Antennas