

Title of the methodology:

Antenna Precision Pointing for Ground-to-LEO and LEO-to-GEO Optical
Communication

Keywords:

Low-Earth orbits, geosynchronous orbits; ground-based stations,

Write-up: (Maximum 500 words)

Optical communication facilitates high volume inter-satellite and satellites-to-ground station communication. In recent times, this high data rate transmission has become particularly necessary. But optical communication is performed with pencil beams which require precision pointing of both ground antennas and satellites antennas in the orbits. The objective of this research is to understand the pointing precision required, identify the sensors and actuators to achieve this precision, and develop the pointing controllers for both earth-based and satellite-based antennas.