

# **Abstract**

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## **The Influence of Varying the Optical Wavelength on ISL Performance Recognizing High Bit Rates**

Space communication systems as employed in satellite to satellite links are traditionally performed using microwaves. Since, the future of satellite systems will permit more efficient and more reliable operation these (Inter Satellite Links) ISLs will be optical links. This paper proposes a link model between satellites in free space over Low Earth Orbit (LEO) in order to recognize maximum bit rate. The performance of such a link is affected by various parameters, as in depending on the propagating wavelength. Moreover, the maximum bit rate is calculated and analyzed employing Avalanche Photodiode (APD) and Non Return to Zero (NRZ) modulation at different wavelengths improving the quality of the system.