Inter-Satellite communication is the revolutionary technology used to transmit the signals between the satellites. This work is focused to carry out the investigation of turbulences in Inter-Satellite communication system by incorporating WDM-PI interleaving scheme. A 6 x 20 Gbps channels are transported over Inter-Satellite link having span of 1000 km to realize the total transmission of 120 Gbps. The role of transmitter pointing errors and receiving pointing errors in the OWC link is investigated and results are reported in terms of SNR, total received power and eye diagrams.

References

- M. A. Krainak, "Inter-satellite communications optoelectronics research at the
- Sushank Chaudhary and Angela Amphawan \textquoteright;The Role and Challenges of Free-space Optical Systems\textquoteright; Journal of Optical Communications. Volume 0, Issue 0, ISSN (Online) 2191-6322, ISSN (Print) 0173-4911, DOI: 10. 1515/joc-2014-0004
- Naresh Kumar, \textquoteright;2. 50 Gbit/s optical wireless communication system using PPM modulation schemes in HAP-to-satellite links\textquoteright;, Optik - International Journal for Light and Electron Optics, Volume 125, Issue 14, July 2014, Pages 3401-3404, ISSN 0030-4026.
- IL Pe\textapos;er, N Naftali, A Yogev, \textquoteright;High power, solar pumped, Nd:YAG, laser amplifier for free space laser communication\textquoteright;, Proc SPIE 3139, 194–204 (1997).
- E Rochat, R Dändliker, K Haroud, RH Czichy, U Roth, D Costantini, R Holzner, \textquoteright;Fiber amplifiers for coherent space communication\textquoteright;, IEEE J Sel Topics Quantum Electron 7(1), 64–81 (2001).
- JW Dawson, MJ Messerly, RJ Beach, MYSEA Stappaerts, AK Sridharan, PH Pax, JE Heebner, CW Siders, CPJ Barty, Analysis of the scalability of diffraction-limited fiber lasers and amplifiers to high average power. OSA Opt Express 16(17), 13240–13266 (2008).
- Sushank Chaudhary, Angela Amphawan, Kashif Nisar, \textquoteright;Realization of free space optics with OFDM under atmospheric turbulence\textquoteright;, Optik - International Journal for Light and Electron Optics, Available online 8 July 2014, ISSN 0030-4026.
- Vishal Sharma, Sushank, \textquoteright;High speed CO-OFDM-FSO transmission system\textquoteright;, Optik - International Journal for Light and Electron Optics, Volume 125, Issue 6, March 2014, Pages 1761-1763, ISSN 0030-4026
- Ramandeep Kaur and Sushank Chaudhary \textquoteright;Simulative Investigation of Laser Line-width and Channel Spacing for Realization of DWDM Systems under the Impact of Four
Role of Turbulences in WDM-Polarization Interleaving Scheme based Inter-Satellite Communication System


**Index Terms**

Computer Science

Communications

**Keywords**

Inter-Satellite Communication  Transmitter Pointing Error  Receiving Pointing Error

Polarization Interleaving

WDM.