Develop and Analyze of a new Bandwidth Efficient Modulation Scheme in Optical PPM

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Abstract:

The objective of this paper is to develop and analyze new bandwidth efficient modulation scheme that offers higher spectral efficiency than traditional PPM, and improvement in data rate. While in conventional optical PPM, only one level of optical pulse is used, this technique “Tow levels PPM” (2LPPM) combines multilevel (Two levels) photon communication `PAM' with pulse position modulation (PPM), thus information is represented by different combinations of the positions and the levels of the pulses. This paper analyses the proposed modulation scheme in terms of data rate, band-utilization efficiency and power requirements.

Keywords:

- Wirelesse Optical communications;
- Pulse Position Modulation (PPM);
- Free space optics;
- 2LPPM