Investigation of PAM-4 for extending reach in data center interconnect applications

Optical four-level pulse amplitude modulation (PAM-4) is being widely studied for various short-reach optical interfaces, motivated by the need to keep cost structure low, and to increase link capacity despite various constraints in component bandwidth. When considering PAM-4 in applications with reach significantly greater than 10km, such as in extended data center interconnects which require optical amplification, impairments such as chromatic dispersion, optical filtering, and ASE must be controlled. We investigate and report on requirements of PAM-4 for extended-reach, data center interconnect links.

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