

Master Thesis:

Adaptive Equalizers for Coherent Optical Communication Systems

At home or on the move - ubiquitous use of network connected devices result in significant traffic growth which has to be transported over metro, long-haul, and inter-datacenter networks. This demands high-capacity, spectrally efficient, and cost effective electro-optic transceivers for reliable communication. Digital signal processing (DSP) along with high speed digital-to-analog converters (ADC) and polarization-diverse coherent receivers allows to mitigate various transmission impairments (i.e., chromatic dispersion, polarization-mode dispersion, and laser phase noise, etc.)

Your Tasks:

- Analyze, optimize and compare different adaptive equalizer schemes
- Test their performance for a variety of modulation formats (QPSK, M-QAM, and probabilistically shaped QAM)
- Analyzed the trade-off on convergence speed, implementation complexity, and performance penalties

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