New MMF, how far can we go?

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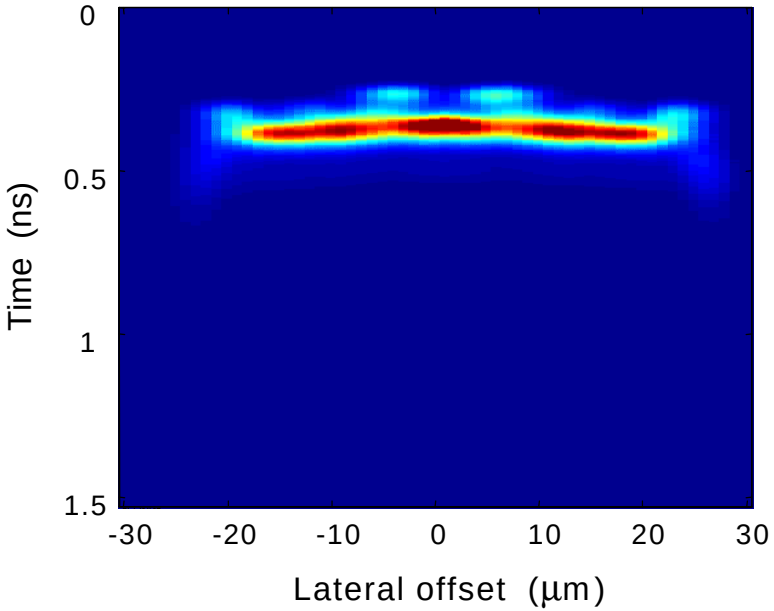
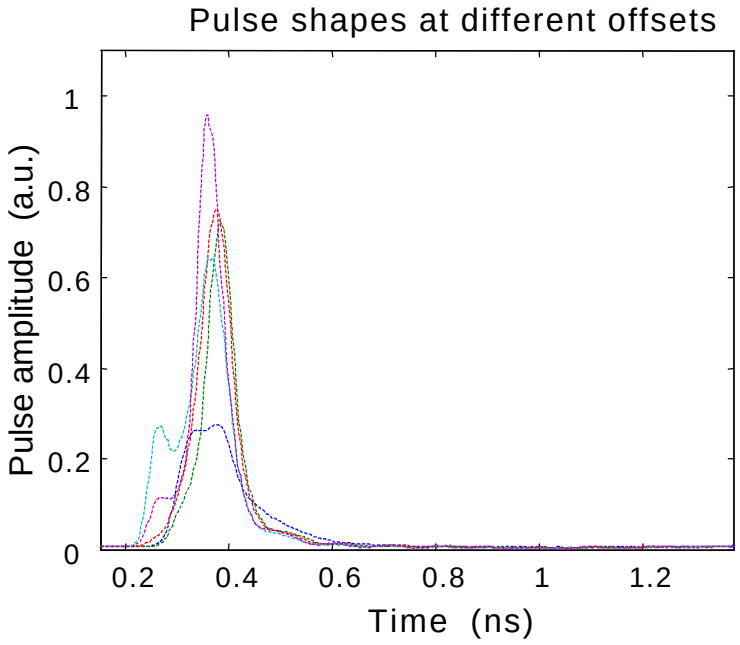
Objectives

- Show the importance of stressed test conditions
- Show the progress in evaluating the new MMF system solution and link length potential

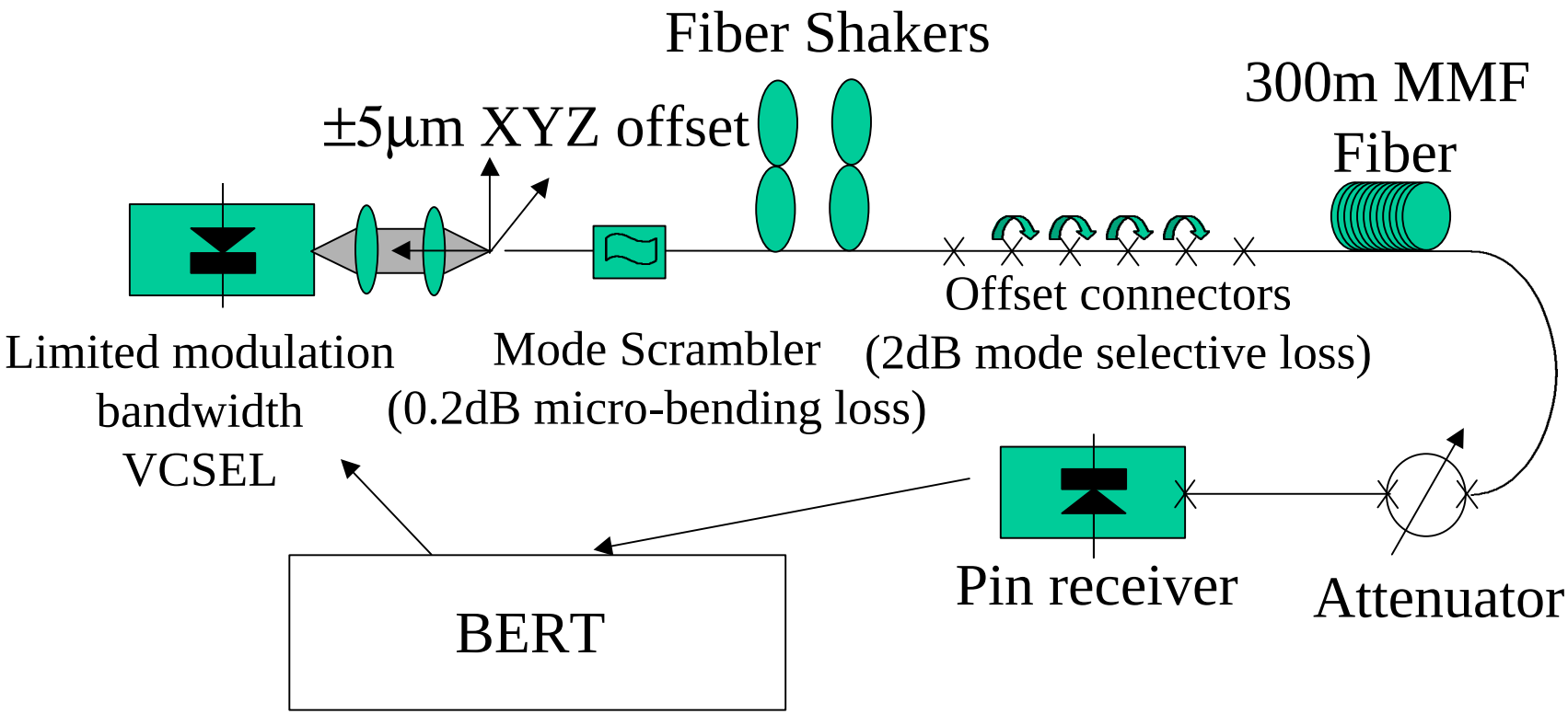
“Worst case” LazrSPEED™ MMF



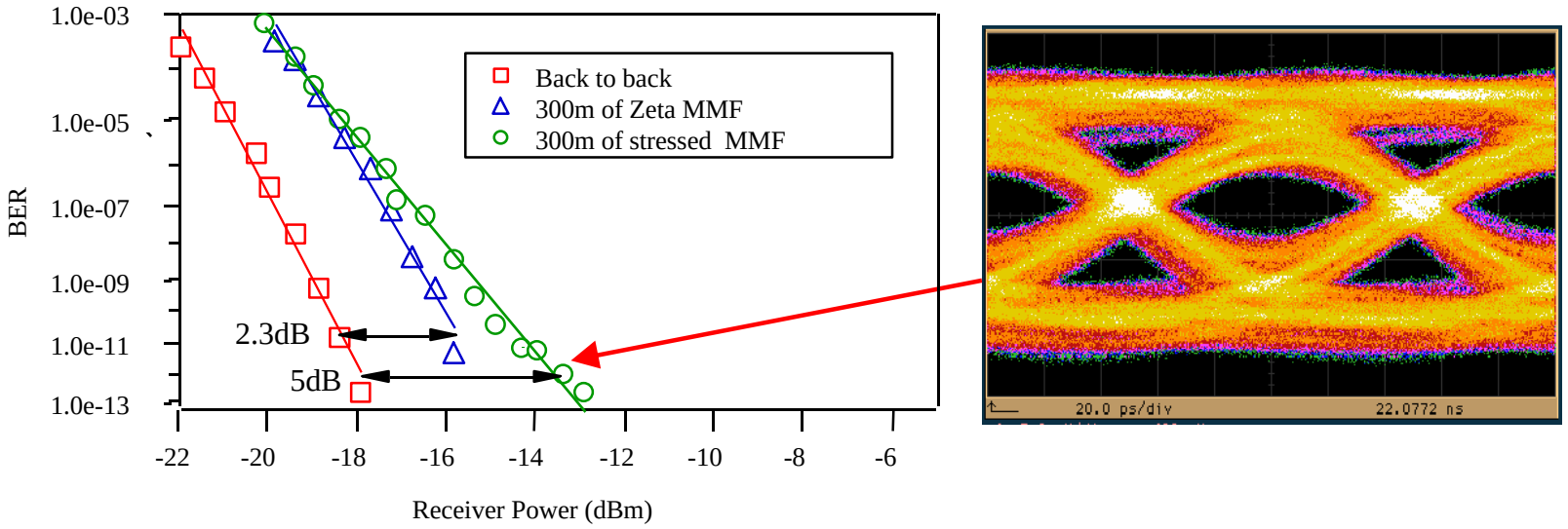


- New Multimode fiber has a flat and narrow DMD

LazrSPEED™ stressed system configuration

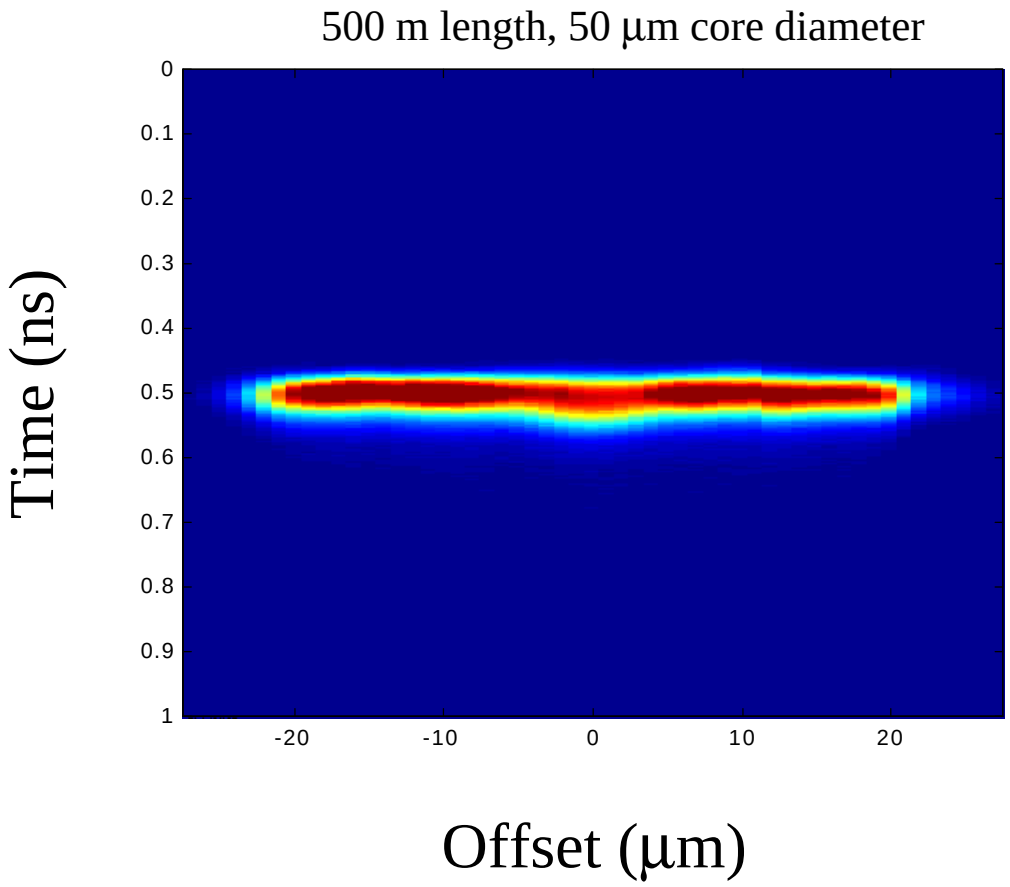


LazrSPEED™ stressed system demonstration



- Worst case LazrSPEED™ fiber can support robust 10 Gb/s transmission for 300m even under stressed conditions

Improved LazrSPEED™ MMF
850 nm Differential Mode Delay Profiles



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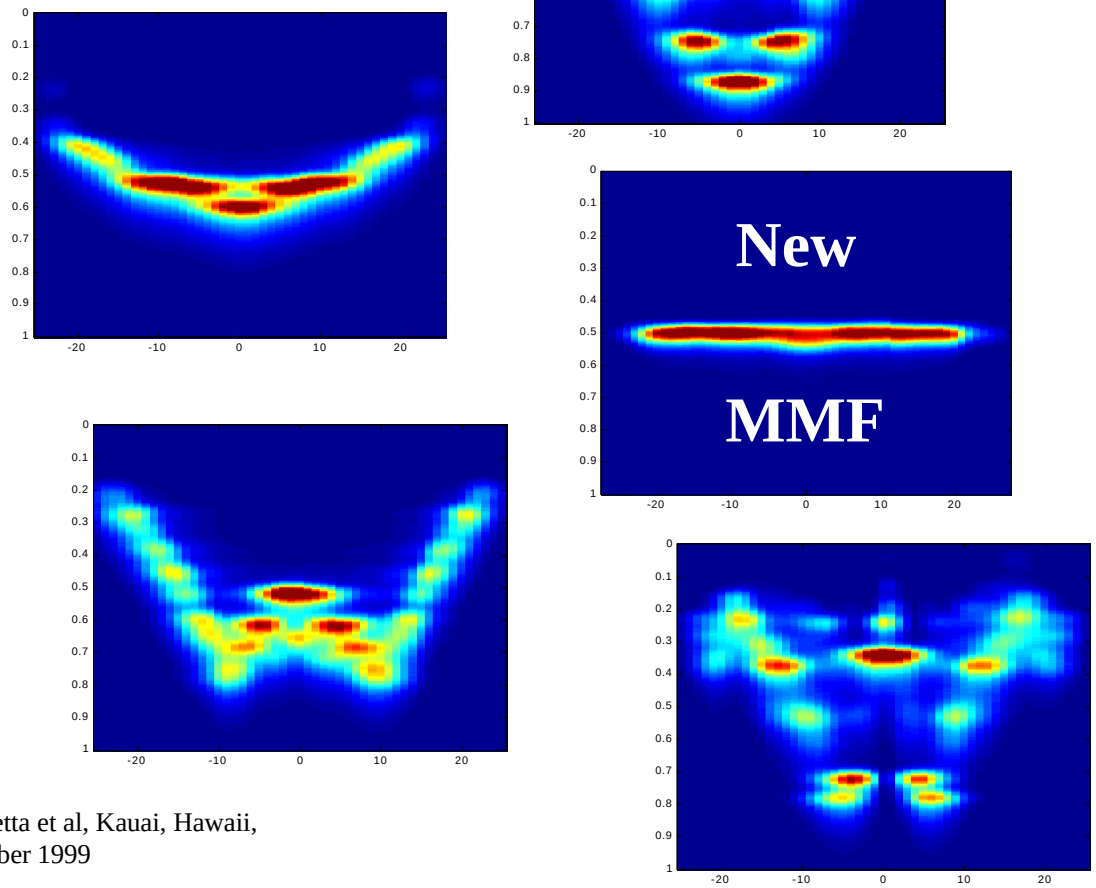
Typical versus High-Bandwidth MMF
850 nm Differential Mode Delay Profiles

All plots: 50 µm horizontal,
1 ns vertical

500 m length, 50 µm core diameter



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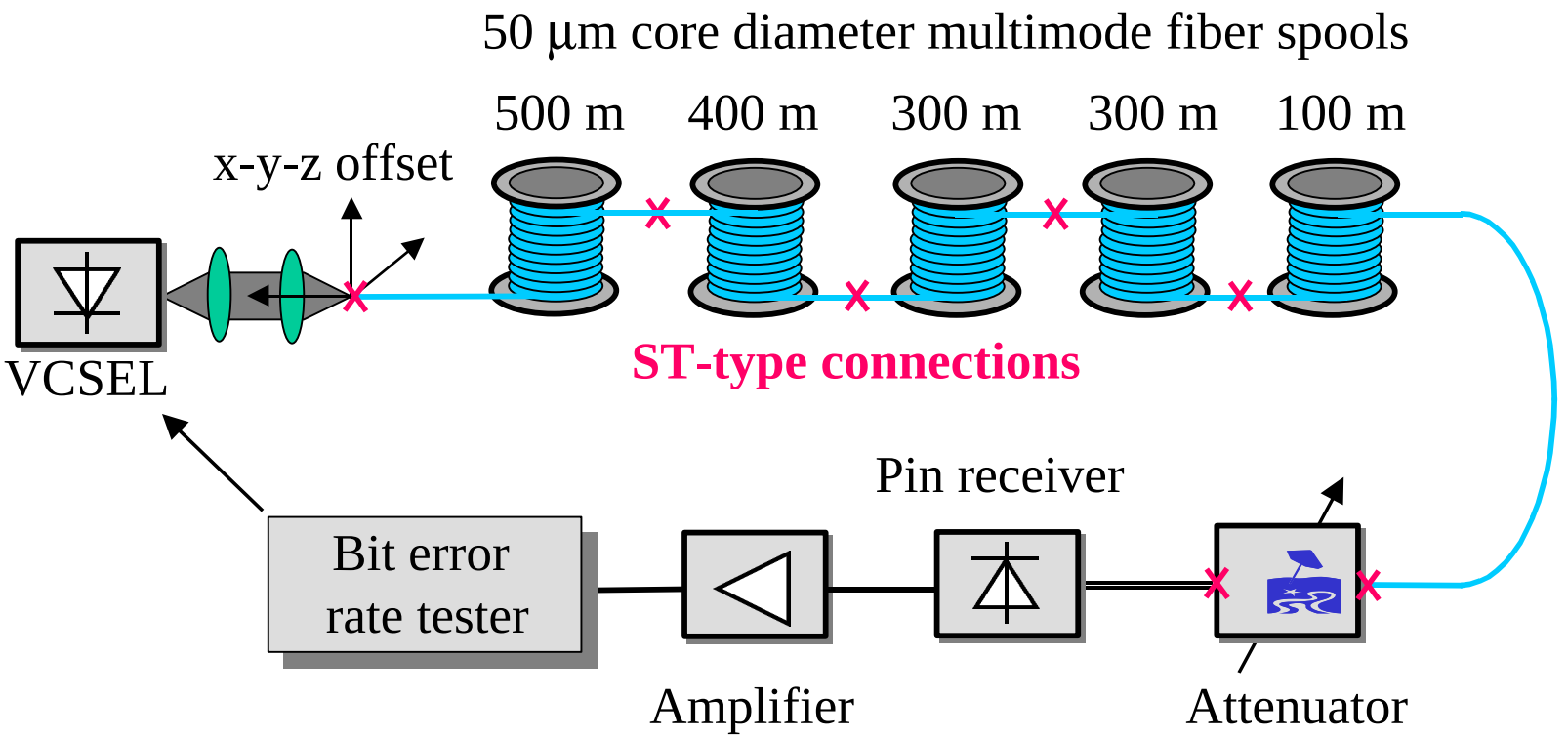
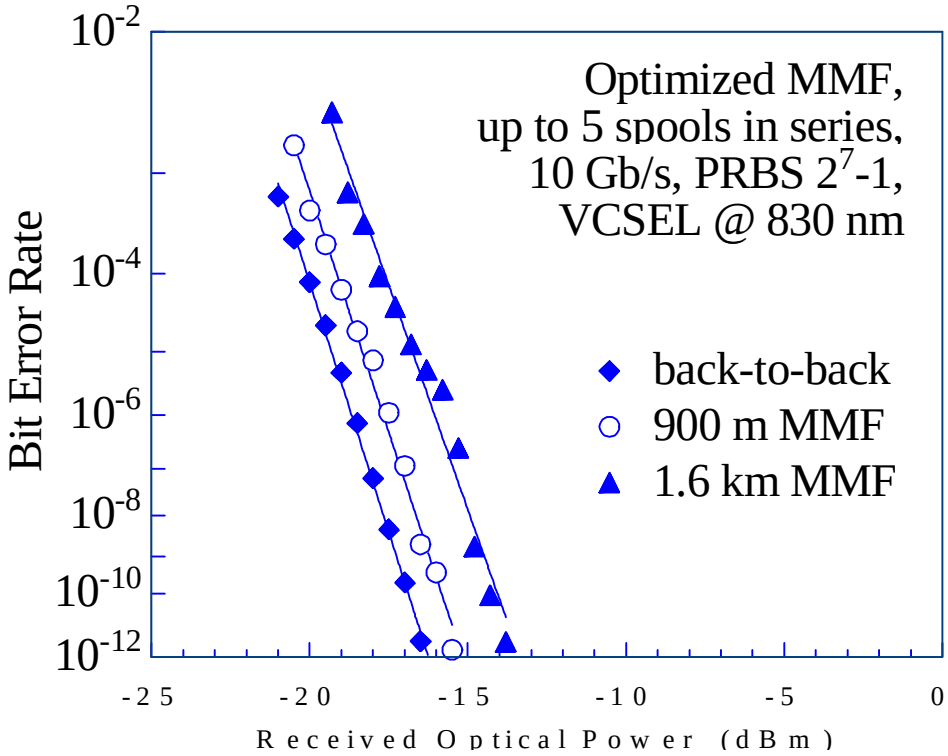
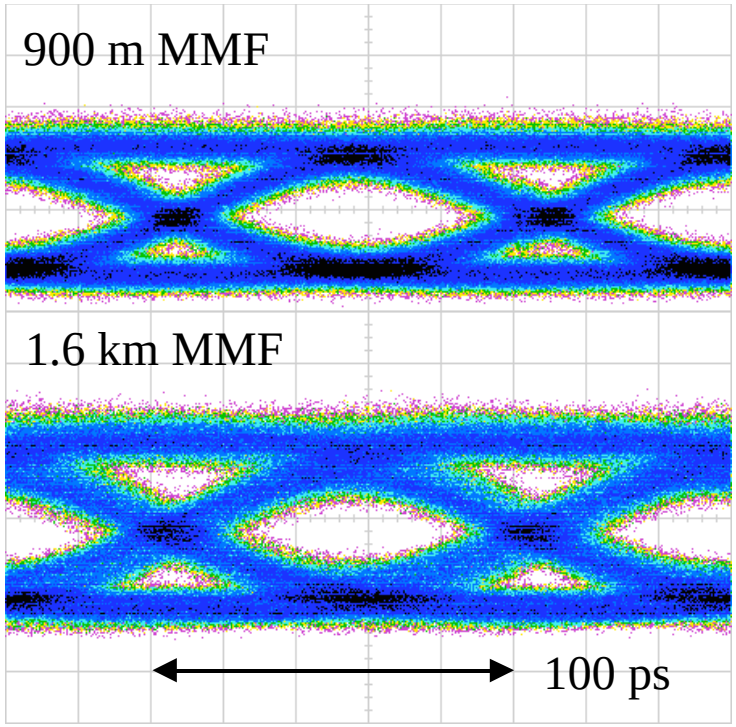
Less Stressed Experimental Set-Up



BER Characteristics for 10 Gb/s Data Transmission with 830 nm VCSEL





Power penalties: **1 dB** for **900 m** and **3 dB** for **1.6 km** transmission

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Summary

- LazrSPEED™ MMF has the potential to support 10 Gb/s data transmission over very long distances in non stressed conditions even with multiple interconnections
- More precise models are needed to understand the cost performance tradeoffs
- The 300 m objective is the right choice for now