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Dispersion Tolerance Measurements @ 1330 nm 25G NRZ/Duobinary with DML

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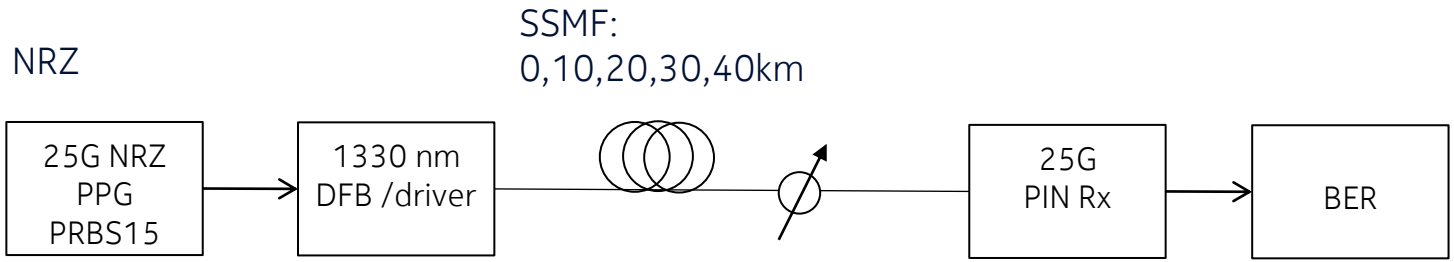
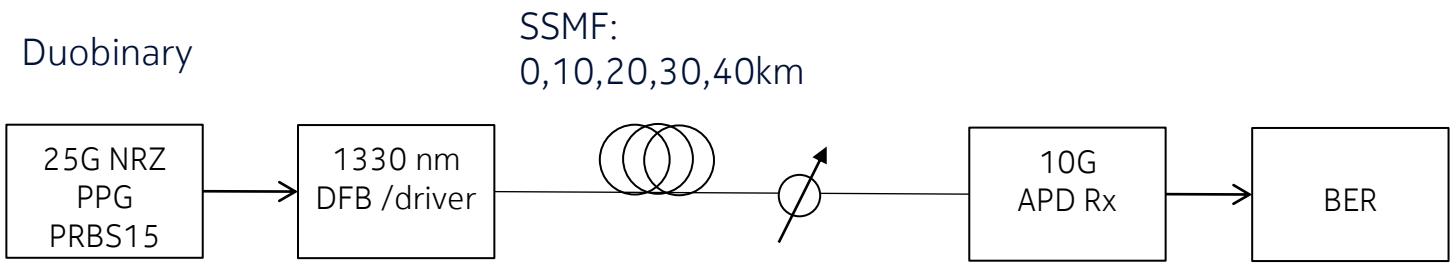
Measurement setups

Using commercial available 25G DML at 1330 nm from MACOM





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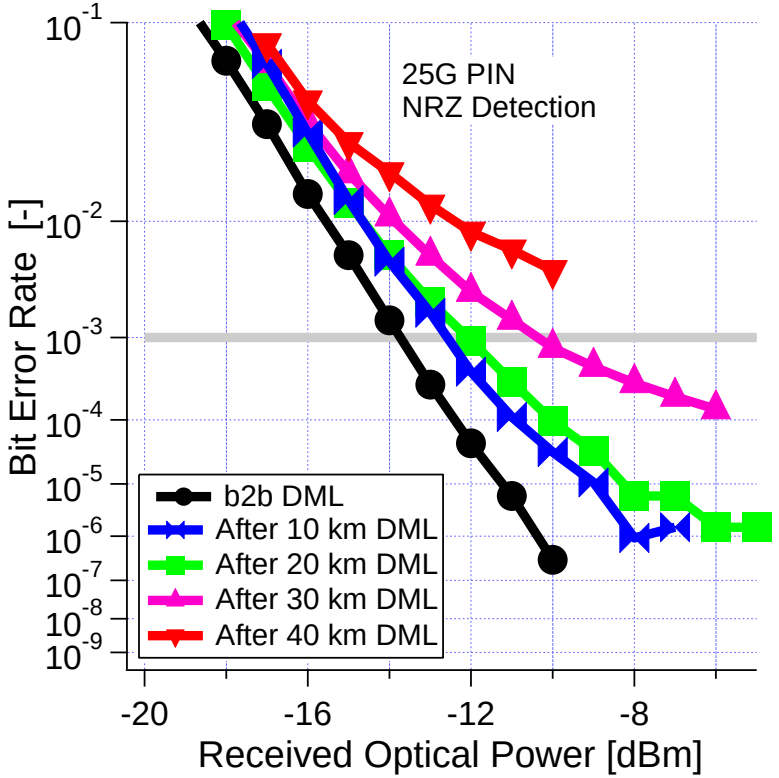
NRZ Results

Dispersion (ps/nm)	Dispersion Penalty (dB)
+17.1 (10 km)	1.15
+34.2 (20 km)	1.65
+51.3 (30km)	3.35



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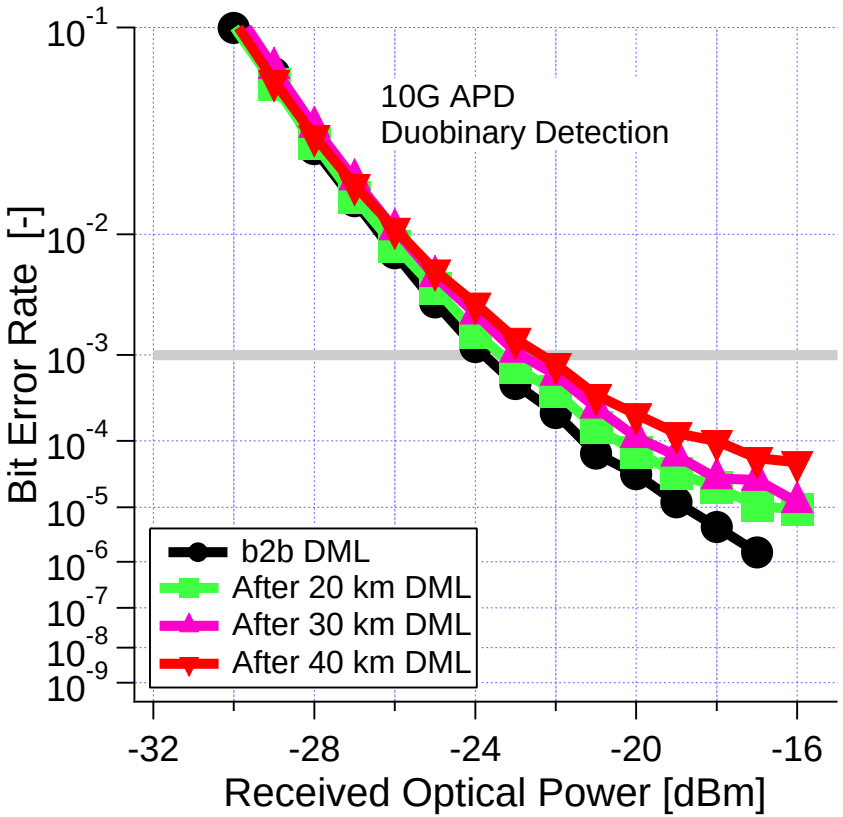
Duobinary Detection Results

Dispersion (ps/nm)	Dispersion Penalty (dB)
+17.1 (20 km)	0.4
+34.2 (30 km)	0.9
+51.3 (40km)	1.4



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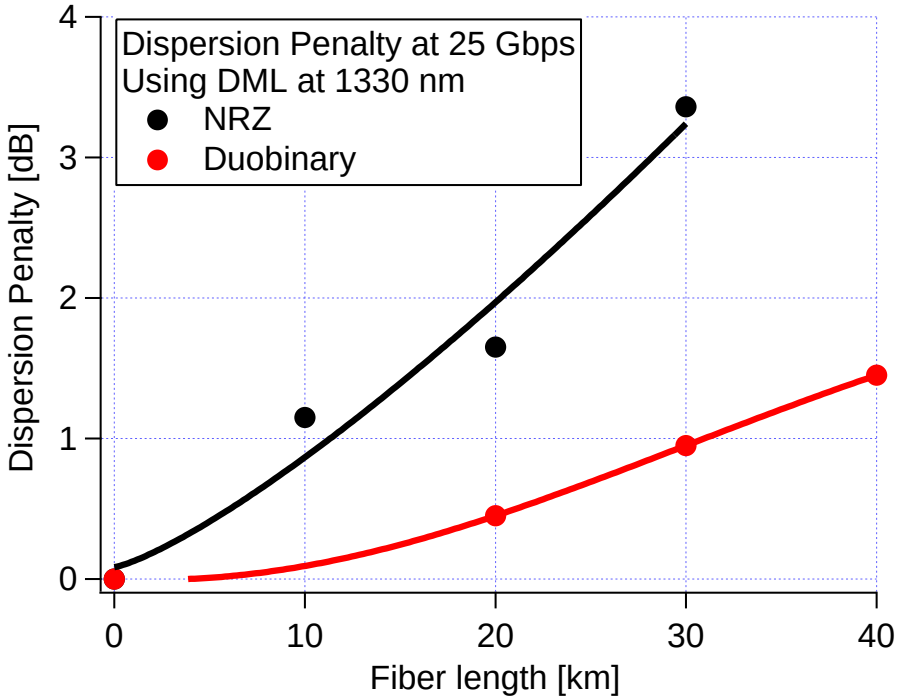
Dispersion Tolerance NRZ versus Duobinary as function of fiber length for 25G DML at 1330 nm



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Conclusions :

Dispersion tolerance for 25G NRZ measured at 1330 nm using DML, which resembles the worst case for the spectrum being considered for DML (1270-1330 nm).

For NRZ dispersion penalty is measured to be 1.15 dB for 10 km and 1.65 dB for 20 km of SMF fiber. These values need to be taken into account for TDP calculations when using DML transmitters.

Duobinary detection is more dispersion tolerant than NRZ detection, thus taking NRZ TDP values will not underestimate the duobinary case.


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