Chromatic dispersion data for deployed G.652.D, G.657.A1, and G.657.A2 fibers

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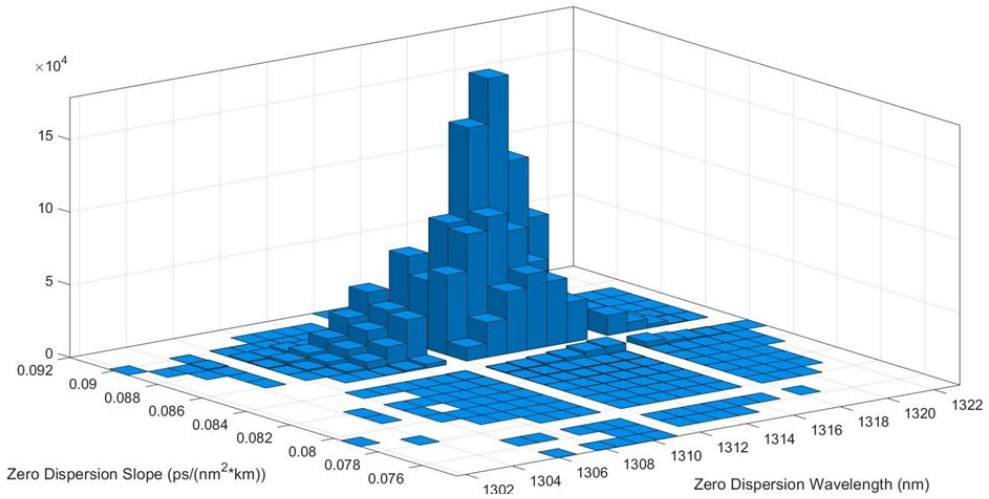
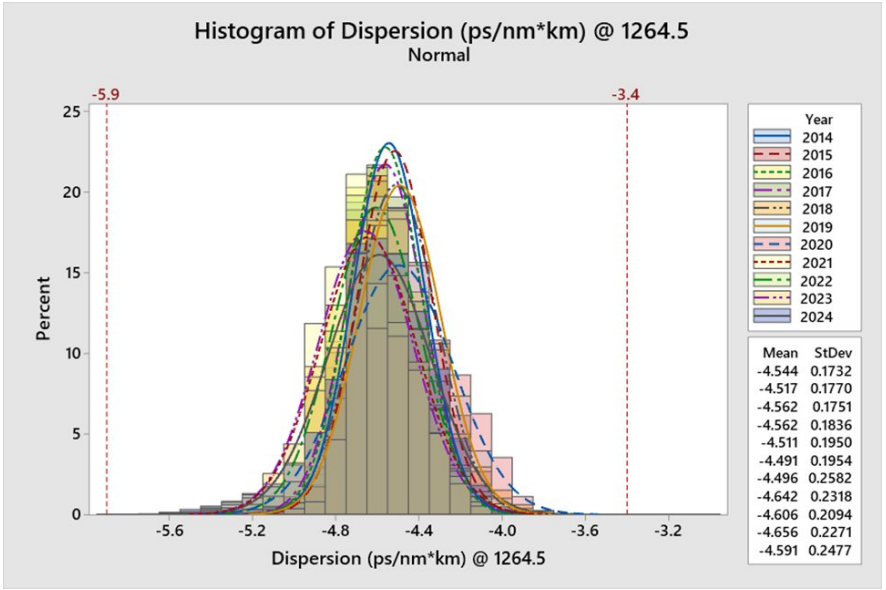
Overview of the data set

- Chromatic dispersion data was gathered from fibers shipped to CommScope
- The data set includes >2.5 million fibers
- Fibers compliant to ITU-T standards
  - G.652.D/G.657.A1
  - G.657.A2
- Fibers were shipped from 2013-2024
- Six manufacturers are included with factories in North America, Europe, and Asia (including China)
- This data set covers 64% and ITU-T data set covers 68% of market

Key findings

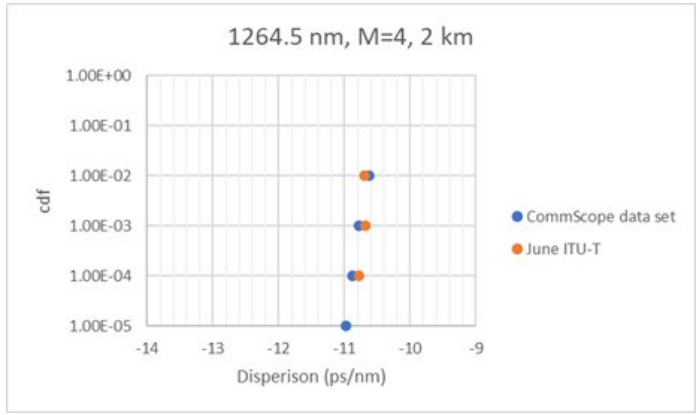


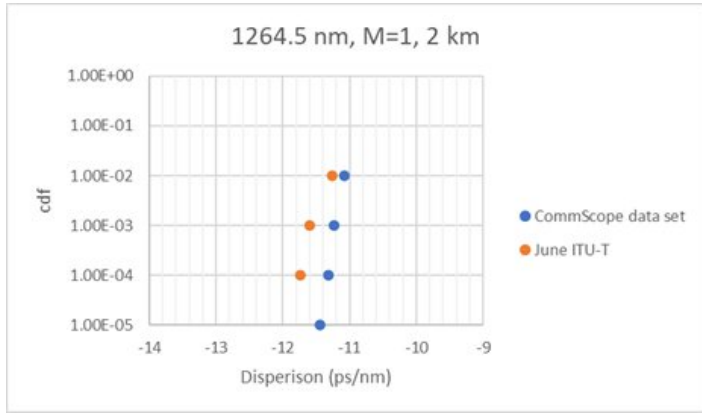


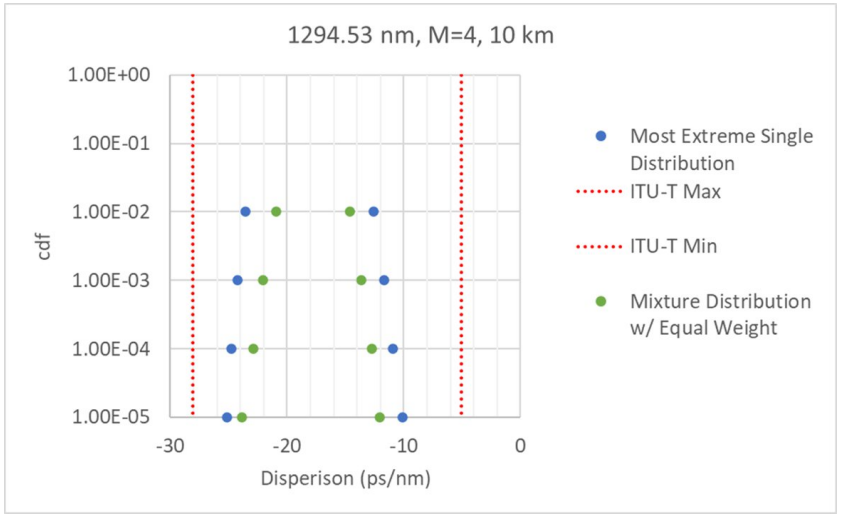
- Most fibers have much less dispersion than expected if calculating with worst case wavelength and slope
- There is a correlation between zero dispersion wavelength and slope
- While entire range of allowed zero dispersion wavelengths and slopes are present, very rare to find a fiber with extreme wavelength and max slope
- Little change in dispersion parameters over the past decade

Key findings (continued)

- Good agreement with latest ITU-T results for M=4
- Less dispersion than ITU-T results for M=1
  - Important for 2 km applications
- Combining distributions from each manufacturer leads to even better dispersion results for M=4







Conclusions

- Participants in IEEE P802.3dj greatly appreciate the work done in ITU-T to investigate chromatic dispersion statistics
- The work done in ITU-T will help enable lanes at 200G, 400G and beyond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