

Silicon Photonic High-Speed Data Transmission System for Detector Instrumentation

Summary

We present a new optical data transmission system for the data read-out of detector systems in particle physics, photon science or material research. It is based on wavelength division multiplexing (WDM), i.e. the modulation of numerous continuous wave (cw) optical carriers which are conveyed over a single optical fiber. A silicon photonic transmitter inside the detector volume consists of monolithically integrated Mach-Zehnder modulators and optical (de-)multiplexers.

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