Electrical & Computer Engineering $\begin{array}{c} S & E & M & I & N & A & R \\ \text{Louisiana State University} \end{array}$

High Capacity Optical Interconnects

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Abstract—Although electrical busses are commonly used to connect computer subsystems, they are limited by loading to relatively small numbers of inputs and outputs. Optical interconnects may be used to connect much larger numbers of subsystems. This talk will describe the use of optical "slabs" as interconnects. Slabs have many more modes than fibers, permitting higher efficiency in broadcasting between many transmitters and many receivers. They also permit "mode division multiplexing," a way of transmitting multiple channels on the same slab. This may be combined with wavelength division multiplexing, so that the same optical equipment can support a very large number of different channels between many transmitters and receivers.

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