Photonic Networks Encyclopedia Article

Photonic Networks

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Photonic Networks

Photonic networks, currently at the research stage, hold the potential of being able to utilize optical signals to transmit information. As with electrical signals, photonic signals would be capable of amplifying, switching, and processing signals. Photonics can, however, manipulate signals of very high bandwidth--far beyond the bandwidth achievable using electronics--resulting in a potential for exceptionally high information content.

Optical fiber cables enable great amounts of information to be transported over long distances at a much cheaper cost than using electrical cable or radio. The limitation to the amount of information carried in a photonic network currently is the **information processing** ability of the electronically driven computers at either end of the optical fibers. In the future, this electronic bottleneck would be removed by using photonic devices.

The development in early 2001 of an ultra-fast photonic switch is bringing the era of photonic devices closer to reality.