

Mathematical principles of optical fiber communications

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20443134&lokasi=lokal>

Abstrak

The synergism between the World Wide Web and fiber optics is a familiar story to researchers of digital communications. Fibers are the enablers of the rates of information flow that make the Internet possible. Currently transoceanic optical fiber cables transmit data at rates that could transfer the contents of a respectable university library in a few minutes. No other medium is capable of this rate of transmission at such distances.

With the maturing of mobile portable telephony and the emerging broadband access market, greater fiber transmission capacity will be essential in the early 21st century. Since the demand for more capacity drives the development of new optics-based technologies, fiber optics therefore remains a vibrant area for research. Knowing that the basic fiber optic technology is mature means that open questions are more sharply focused and permit deeper mathematic content.