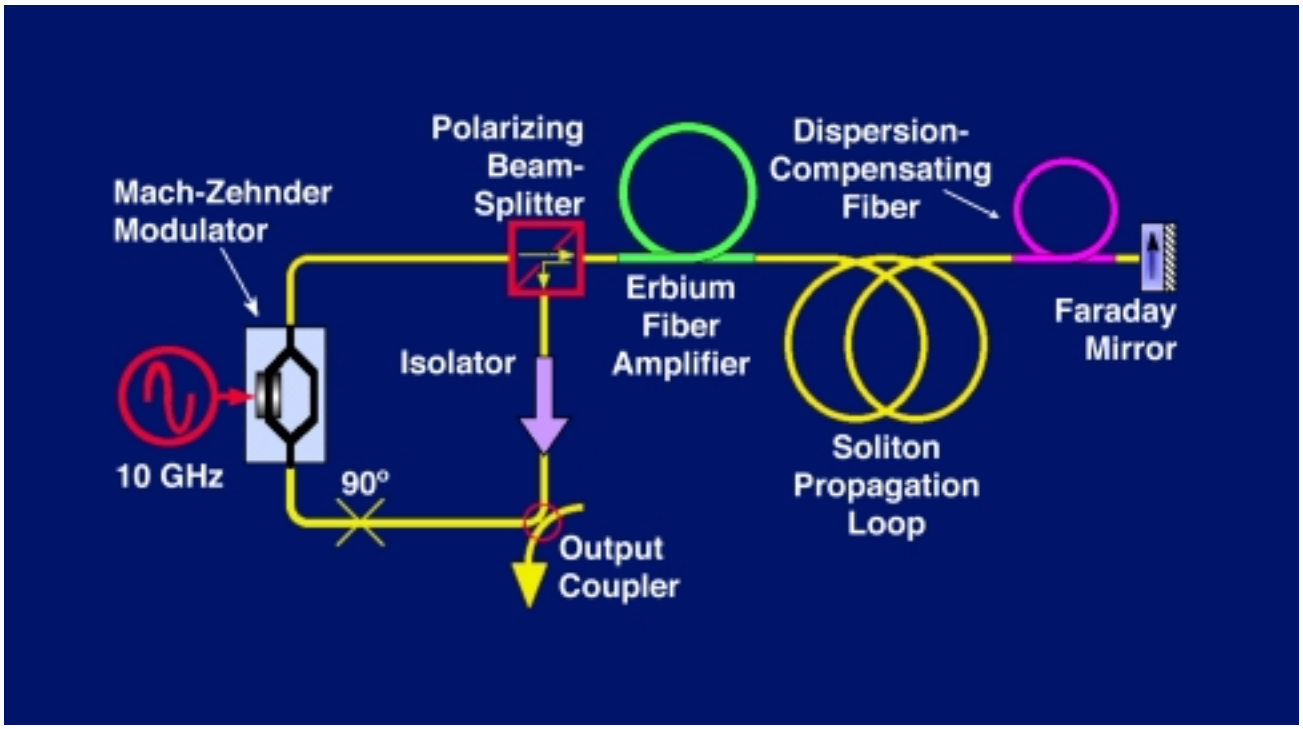
A HIGH-REPETITION-RATE ULTRAFAST FIBER LASER FOR FIBER-OPTIC COMMUNICATIONS SYSTEMS



An actively mode-locked 1.5-μm fiber laser utilizing soliton pulse compression has been developed as a reliable source of dropout-free picosecond pulses for ~100-Gbit/sec time-division multiplexed fiber-optic communications systems. The laser can operate at repetition rates in excess of 10 GHz.

Advantages offered by this laser include:

- Pulse durations ~1 picosecond
- Error-free operation: pulse dropout ratio less than 10^{-12}
- Repetition rate in excess of 10 GHz
- Slaved to an external frequency standard
- Environmentally stable single-polarization operation
- Utilizes economical non-polarization-maintaining gain and dispersion-compensation fibers

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