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Title:Eliminating the additional input beam in all-optical XOR gate using Terahertz Optical Asymmetric Demultiplexer (TOAD) based interferometer: A theoretical analysis
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Abstract:All-Optical XOR Logic is a key technology for performing a set of operations in optical time division multiplexing (OTDM) multi-access network. In this paper an All-Optical Boolean XOR logic gate with Terahertz Optical Asymmetric Demultiplexer (TOAD) based interferometric switch is designed and described. In this proposed XOR gate, no additional input light source is used. Numerical simulation is also presented, which verifies the theoretical results. Contrast ratio, extinction ratio, amplitude modulation, bit error rate and signal to noise ratio values have also been analyzed.
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