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Beam propagation through a thermo-optic waveguide switch
CHANGBAO MA, EDWARD VAN KEUREN, Georgetown University, Department of Physics — We present simulations and experiments of a thermo-optic waveguide switch using a novel 3-d wide angle beam propagation algorithm. The switch is based on a Y-branch directional coupler, with two microheaters embedded beneath both sides of the Y-branch. These two microheaters act to generate an inhomogeneous temperature profile, by which most of the energy of the light signal propagating in the waveguide will be shifted to one of the two branches. The oblique sections of the waveguides require that the second order terms in the beam propagation method be included in the simulation. Both the thermo-optic effects and beam propagation will be investigated to optimize the parameters of the device.

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