Ring Modulator and Parameter
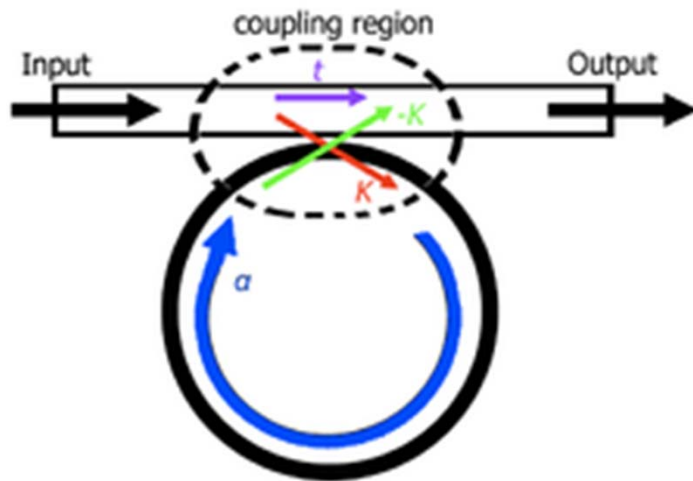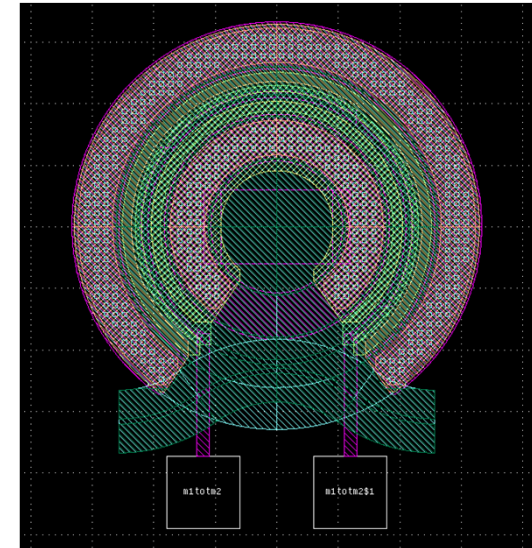

- Optical modulator

- Small area & Low power
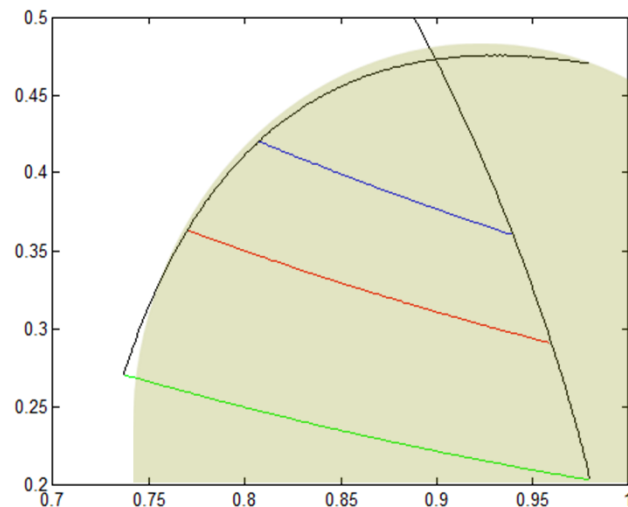
- a : loss coefficient

  $(a \rightarrow 1 = \text{loss} \rightarrow 0)$

- κ : Coupling coefficient
- τ : Through coefficient
- θ : Single pass phase shift
- n : Refractive index
- L : Length of ring
- λ : Wavelength of light

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Parameter Optimization

- **Goal**: Physical parameter optimization by using two pole one zero system

$$|H(s)| = \left| G\frac{s+z}{s^2 + 2\zeta\omega_n s + \omega_n^2} \right|$$

\<Frequency response\>

\<ξ vs effciency\>