

Fig. 8. Amplitude response for undesired passband at different frequency detuning.

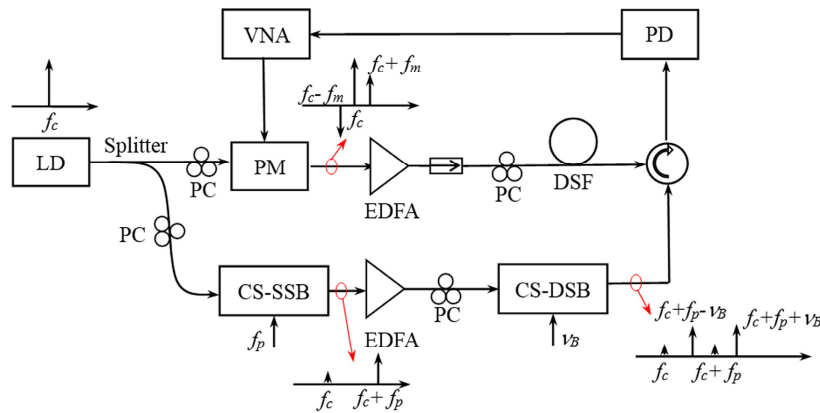


Fig. 9. Configuration of the proposed microwave photonic filter. LD: Laser Diode, CS-SSB: Carrier suppressed Single Sideband Modulation, CS-DSB: Carrier Suppressed Double Sideband Modulation.

4. Conclusion

A single passband tunable microwave photonic filter based on stimulated Brillouin scattering is analyzed numerically. Employing two pumps, 44GHz tuning range is obtained free from crosstalk and the continuous tuning is achieved by changing the frequency space between pumps and carrier. The results also demonstrate that tuning range can be enlarged to $2\nu_B$ multiplying N which is the total quantity of pump. Overcoming the wavelength stability, the Brillouin based filter has potential application in microwave and millimeter wave wireless communication.

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