Abstracts

Photonics-based interference mitigation filters

R.A. Minasian, K.E. Alameh and E.H.W. Chan. "Photonics-based interference mitigation filters." 2001 Transactions on Microwave Theory and Techniques 49.10 (Oct. 2001, Part II [T-MTT] (Special Issue on Microwave and Millimeter-Wave Photonics)): 1894-1899.

New photonic filter structures for interference mitigation of microwave signals are presented. These fiber filters have a parallel topology, and comprise a grating based photonic bandpass filter, or a dual offset cavity structure based on a new noncommensurate delay-line approach. The new topologies overcome the problem of synthesizing both a narrow stopband and a very-wide and flat passband, to simultaneously excise interference with minimal impact on the wanted signal over a wide microwave range. Results demonstrate stopbands of around 1% of center frequency, wide-band flat transmission, and a shape factor of 10.5 that is the lowest reported for a photonic notch filter, in excellent agreement with predictions.

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