# Abstracts

## Stopbands of the First-Order Bragg Interaction in a Parallel-Plate Waveguide Having Multiperiodic Wall Corrugations

The stopbands of the first-order Bragg interaction in a parallel-plate waveguide having multiperiodic wall undulations are investigated via the perturbation method of multiple scales. For a structure having two periods, the first-order Bragg interaction involves two as well as three coupled modes. Transition curves separating passbands from stop-bands are found for all possible interactions. The effect of the multiple periodicity in the structure is found to be an increased band-width for the attenuation band as well as considerable attenuation throughout the band owing to the increased number of interactions. This is useful for the design of multichannel narrow-band microwave filters. The analysis is carried out for the first three dominant modes of the structure.

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