## Название публикации:
On the theory of propagation of electromagnetic waves in a regular waveguide filled with multi periodic modulated medium


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## Аннотация:
The propagation of transverse-electric (TE) and transverse-magnetic (TM) waves in the waveguide with multiperiodically modulated filling is considered. The wave equations for the E~ z (x, y, z,t) = e (z) Ez (x, y, z,t) and Hz (x, y,z,t), which describe the TE and TM fields in the waveguide, are found. The solutions of the wave equations in accuracy of the first approaching of the small indexes of modulation (m1e ˜ m2e ˜ m3e ˜ m4e << 1) and in the region of “weak” interaction between the signal wave and the modulation wave are received. They show, that the TE and TM fields are the sum of harmonics with different amplitudes.




## Ключевые слова:
Electromagnetic wave, Interaction, Modulated filling, Waveguide