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**Short-wave asymptotic solutions of the wave equation with localized perturbations of the velocity.** (English) [Zbl 1441.35150](#)

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**Summary:** To describe the propagation of waves in media containing localized rapidly changing inhomogeneities (e.g., narrow underwater ridges or pycnoclines in the ocean, layers with sharply changing optical or acoustic density, etc.), it is natural to use the wave equation with a small parameter characterizing the ratio of the scales of the localized inhomogeneity and of the general change of velocity (e.g., of the thickness of a pycnocline to the external typical scale of changes in ocean density). We describe the propagation of wave packets whose characteristic wavelength is comparable with the scale of inhomogeneity.

**MSC:**

[35L15](#) Initial value problems for second-order hyperbolic equations

[35B27](#) Homogenization in context of PDEs; PDEs in media with periodic structure

Cited in **2** Documents

**Keywords:**

propagation of wave packets

**Full Text:** [DOI](#)

**References:**

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