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Construction of the space-time ray asymptotic forms in nonstationary problems on the basis of stationary high-frequency asymptotic formulas. (Russian) [Zbl 0604.76072](#)

Probl. Mat. Fiz. 11, 210-222 (1986).

An algorithm is proposed for the transition from the short-wave length asymptotic formula of a stationary problem to the space-time asymptotic expression of the corresponding nonstationary problem of the propagation of linear waves.

The connection between the algorithm considered and the constructions of the space-time ray method is studied. As an example, the problem of finding a diffraction wave in a deep shadow behind a smooth convex obstacle is considered in the case when the incident wave is given by its space-time ray decomposition. All constructions are formal and based on the results of a stationary problem.

Reviewer: O.Dumbrajs

MSC:

76Q05 Hydro- and aero-acoustics

Keywords:

short-wave length asymptotic formula; stationary problem; space-time asymptotic expression; nonstationary problem; propagation of linear waves; space-time ray method; diffraction wave; deep shadow; smooth convex obstacle