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Abstracts of Short Communications and Posters

Section:

10. Partial Differential Equations

1991 MS Classification: 30, 35, 41
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A Periodic Knitting Problem for the Helmholtz Equation

A difraction of a plane wave incident to a periodic surface separating two dielectric materials with different real dielectric coefficients. Existence and uniqueness of solution to a periodic khitting problem for the Helmholtz equation is proved. Is proved also that the solution can be approximated by linear combinations of reflected and transmitted waves in the groove region (the Rayleigh method).

Reference: G. V. Smirnov, A Periodic Knitting Problem for the Helmholtz Equation, *J. Math. Anal. Appl.* **214** (1997), 395-419.