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Acoustic scattering by a rigid barrier between two fluid-loaded parallel elastic plates. (English) [Zbl 0731.73019](#)
Proc. R. Soc. Lond., Ser. A 435, No. 1893, 217-232 (1991).

Summary: A plane sound wave is incident upon two infinite, fluid-loaded, parallel elastic plates, separated by a perpendicular rigid barrier. The Wiener- Hopf technique is applied to obtain a set of linear simultaneous equations, which can be inverted numerically to calculate the sound scattered by the barrier. In the low-frequency limit an approximate analytic solution is obtained and compared with a numerical example.

MSC:

- 74J20 Wave scattering in solid mechanics
- 74F10 Fluid-solid interactions (including aero- and hydro-elasticity, porosity, etc.)
- 76Q05 Hydro- and aero-acoustics
- 47B35 Toeplitz operators, Hankel operators, Wiener-Hopf operators

Keywords:

plane sound wave; infinite, fluid-loaded, parallel elastic plates; perpendicular rigid barrier; Wiener-Hopf technique; set of linear simultaneous equations; low-frequency limit; approximate analytic solution

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