

[Alves, Carlos](#); [Ha Duong, Tuong](#)

**Numerical experiments on the resonance poles associated to acoustic and elastic scattering by a plane crack.** (English) [Zbl 0874.73077](#)

Cohen, Gary (ed.), Mathematical and numerical aspects of wave propagation. Proceedings of the third international conference, Mandelieu-La Napoule, France, April 24–28, 1995. Philadelphia, PA: Society for Industrial and Applied Mathematics. 544-553 (1995).

Summary: We consider either an acoustic or an elastic wave with complex frequency incident on a plane crack of arbitrary shape in a three-dimensional space. Then we apply the variational boundary equation method to develop a numerical algorithm calculating the resonance poles in the scattering problem. Several tests are made in order to obtain a relation between these poles and the peaks of the scattering cross-section produced by incident waves with real frequencies.

For the entire collection see [\[Zbl 0846.00038\]](#).

**MSC:**

- [74S30](#) Other numerical methods in solid mechanics (MSC2010)
- [74P10](#) Optimization of other properties in solid mechanics
- [74J20](#) Wave scattering in solid mechanics
- [74R99](#) Fracture and damage

Cited in **3** Documents

**Keywords:**

peaks of scattering cross-section; variational boundary equation method