

Ting, T. C. T.

Explicit secular equations for surface waves in an anisotropic elastic half-space from Rayleigh to today. (English) [Zbl 1183.74121](#)

Goldstein, Robert V. (ed.) et al., Surface waves in anisotropic and laminated bodies and defects detection.; Proceedings of the NATO advanced research workshop, Moscow, Russia, February 7–9, 2002. Dordrecht: Kluwer Academic Publishers (ISBN 1-4020-2385-5/hbk). NATO Science Series II: Mathematics, Physics and Chemistry 163, 95-116 (2004).

It is shown in most cases that the derivation of the secular equations for a general anisotropic material and for a special anisotropic material has to be carried out separately. The author shows here that all derivations can be presented using the *A. N. Stroh* [J. Math. and Phys. 41, 77–103 (1962; [Zbl 0112.16804](#))] formalism or its modified version [*T. C. T. Ting*, Q. J. Mech. Appl. Math. 55, No. 2, 297–311 (2002; [Zbl 1062.74023](#))]. It is also shown how the derivations can be improved or made more general. While numerical schemes are available for computing the surface wave speed, an explicit secular equation allows to analyze the dependence of the surface wave speed on elastic constants. For instance, for the special case of monoclinic materials with symmetry.

For the entire collection see [[Zbl 1074.74002](#)].

Reviewer: [Eugeni Syrkin \(Khar'kov\)](#)

MSC:

[74J15](#) Surface waves in solid mechanics
[74E10](#) Anisotropy in solid mechanics

Cited in **1** Review
Cited in **7** Documents

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