A really long title that describes the whole article[a)]

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Running title: Running title for article

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ABSTRACT

The abstract summarizes the article in a concise way! It can't be too long else it won't fit in the journal.

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I. INTRODUCTION

In a previous paper,[1] the authors investigated crystals.[2] However, we are going to do something else.

II. NUMERICAL RESULTS

We have a lot of numerical results to show here. We will discuss both linear and nonlinear effects.

II.A. Linear effects

A plane surface wave with wave number k is assumed to propagate in the x direction along the surface of an anisotropic half-space $z \leq 0$. The displacement components of the linearized equations of motion can be written in the form

$$u_j = \sum_{s=1}^{3} C_s \alpha_j^{(s)} \exp\left[ikl_3^{(s)}\right] \exp[ik(x-ct)], \tag{1}$$

where $j = x, y, z$, c is the small-signal SAW speed, $l_3^{(s)}$ and $\alpha_j^{(s)}$ are the eigenvalues and eigenvectors, respectively, of the secular equation, and C_s are coefficients which allow the stress-free boundary conditions to be satisfied. The parameters c, $l_3^{(s)}$, $\alpha_j^{(s)}$, and C_s are determined using standard techniques. Nonlinear effects are described in Sec. II.B.

II.B. Nonlinear effects

Because the nonlinear theory used here has been discussed at length elsewhere, only the essential equations are summarized. The coupled nonlinear evolution equations for the surface acoustic waves (without absorption) are

$$\frac{dv_n}{dx} = \frac{n^2\omega}{2\rho c^4} \sum_{l+m=n} \mathrm{sgn}(lm) S_{lm(-n)} v_l v_m \,, \tag{2}$$

where v_n is the spectral amplitude of the nth harmonic, $\omega = kc$ is the angular frequency, and S_{lm} is the nonlinearity matrix. The matrix element S_{lm} describes

generation of the the nth harmonic due to interaction of the the lth and mth harmonics.

II.B.1. General study

We decided to do a general study to find out about things generally.

II.B.2. Detailed study

However, a more detailed study is useful too.

III. SUMMARY

This paper examines a lot of interesting things, especially Sec. II.B. We should get the Nobel prize!

ACKNOWLEDGMENTS

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REFERENCES

[1]G. W. Farnell, "Properties of elastic surface waves," in *Physical Acoustics*, edited by W. P. Mason and R. N. Thurston (Academic Press, New York, 1970), Vol. 6, pp. 109–166.

[2]W. Borchardt-Ott, *Crystallography*, 2nd ed. (Springer-Verlag, New York, 1995).

FIGURE CAPTIONS

1. Dependence of something on something else.

2. Dependence of anything on anything else.