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Discussion

“The elliptical Hertzian contact of transversely isotropic magnetoelastic bodies” by Hou et al., Vol. 40, 2003, pp. 2833–2850

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Numerous articles have appeared in the past several years treating piezoelectric, magnetoelastic and magnetoelastic bodies, all of them are using my method and my notations. Some do mention this fact and some do not.

It looks like some of the final results are incorrect. For example, the magnetoelastic curve for $n\tau_1$ in Fig. 4 goes down and then makes a sharp angle and goes almost vertically up. The last two curves in Fig. 5 make inexplicable waves, rather than being monotonous. The authors do not give any explanation for such a behaviour.

I suspect that these seemingly incorrect results are due to the authors use of Hanson and Puja (1997) formulae, without thorough verification of their correctness. I have checked just two of them, namely formulae (A20) and (A21). Both had one sign incorrect. I suspect these are not the only misprints in the article.

The authors should start with re-checking of Hanson's formulae and re-calculating their numerical results. If they still get the above described curves of the same shape, they should explain these peculiarities, but I suspect that re-calculated curves would behave exactly as expected.

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