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Discussion

Reaction to: Comments to paper by Spitas "A continuous piecewise internal friction model of hysteresis for use in dynamical simulations (*Journal of Sound and Vibration* 324: 297–316)"

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The latest clarifications by Muravskii [1], offered with respect to his paper on frequency-independent damping [2], indeed help bring to light evidently important modelling assumptions of that author, chiefly a special damper 'locking' mechanism: but this information was missing in the original work. Of course, the analysis in [3] was based on a reproduction of the facts *actually* presented in [2] and therefore any implicitly assumed 'locking' was not (and could not be) considered. Thus the analysis in [3] with regard to [2], as it stands, is valid.

For the sake of discussion, it is not unthinkable that some sort of idealised phenomenon (i.e. damper 'locking'?) might produce an effect like that claimed by Muravskii (Yet, how the addition of a linear spring can cancel system discontinuities, as claimed again in [1], is not quite clear.). However, Muravskii again does not offer in [1] a set of equations for the system under study (i.e. to explain clearly his concept of damper 'locking') but, like in his original publication [2], offers a verbal description that unfortunately does not readily admit mathematically rigorous scrutiny. I am missing this component, which denies me the possibility of a more involved verification of his claims.

References

[1] G. Muravskii, Comments to paper by Spitas "a continuous piecewise internal friction model of hysteresis for use in dynamical simulations, *Journal of Sound and Vibration* 324 (2009) 297–316.
[2] G. Muravskii, On frequency independent damping, *Journal of Sound and Vibration* 274 (2004) 653–668.
[3] C. Spitas, A continuous piecewise internal friction model of hysteresis for use in dynamical simulations, *Journal of Sound and Vibration* 324 (2009) 297–316.

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