Reply to "Comment on 'An approximate transfer function for the dual-resonance nonlinear filter model of auditory frequency selectivity' " (L)

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Duifhuis is correct to say that the paper of Lopez-Poveda (2003) lacks an adequate description of the historical framework that led Meddis *et al.* (2001) to develop and publish their dual-resonance nonlinear (DRNL) filter. Such a description was omitted in Lopez-Poveda (2003) for the sake of conciseness and because the paper was presented as an extension of the work of Meddis *et al.* (2001), where an historical account can be found. The historical review provided by Duifhuis in his comment letter is even more comprehensive and, therefore, most welcome.

Also welcome is Duifhuis' clarification concerning the concept of *transfer function* (hence of *impedance*). This, of course, does not apply to nonlinear systems like the DRNL filter and this is already acknowledged by Lopez-Poveda (2003). It is the impossibility of deriving an exact analytic transfer function for the DRNL filter that makes the *approximate* transfer function suggested by Lopez-Poveda (2003) such a useful tool for quickly evaluating the *peak*-amplitude and phase aspects of its response to pure tones. Furthermore, the approach of Lopez-Poveda (2003) may be generalized to derive approximate transfer functions for other nonlinear filter systems.

Lopez-Poveda, E. A. (**2003**). "An approximate transfer function for the dual-resonance nonlinear filter model of auditory frequency selectivity," J. Acoust. Soc. Am. **114**, 2112–2117.

Meddis, R., O'Mard, L. P. O., and Lopez-Poveda, E. A. (**2001**). "A computational algorithm for computing nonlinear auditory frequency selectivity," J. Acoust. Soc. Am. **109**, 2852–2861.

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