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Discussion

Author's Reply (Response to "On the energy transfer at boundaries of translating continua")

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The authors would like to thank Dr. Metrikine and colleagues for their comments [1]. They have derived an extended energy reflection coefficient R_ω for dispersive translating continua using the spectral energy density. The extended energy reflection coefficient is rigorously correct for one-dimensional translating systems. However, the concluding remark in their paper [1], that *the energy reflection coefficient R introduced in our paper* [2] *cannot be applied to dispersive continua*, is true for an arbitrary incident pulse but it is not true for harmonic waves examined in paper [2]. In [2] only a steady train of harmonic waves is considered to be incident, in the manner considered for strings [3], where wave distortion due to dispersion does not occur. The non-distorted propagation of harmonic waves is possible in both infinite and finite beams [4]. An arbitrary pulse has various frequency components (bandwidth) and it experiences the distortion of the pulse shape because phase velocities are dependent on frequency.

Again, the authors appreciate that Dr. Metrikine's paper takes up the concept of the energy reflection coefficient introduced in our paper and extends it to more general dispersive translating continua.

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