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Letter to the Editor

Comments on "Sound transmission through elastomeric bulb seals"

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The authors have performed an extremely thorough analysis of a very important practical problem [1].

As stated by the authors, the frequency value of the seal is strongly dependent upon the elastic modulus of the elastomeric material. On the other hand, the values of engineering parameters depicted in Table 1 indicate large deformation of the sample and the continuous system. Possibly non-linear behavior is exhibited from both, constitutive and strain–displacement viewpoints.

Possibly, it would have been also useful to study the behavior of the seal material in terms of the natural strain ($\bar{\varepsilon}$) and the natural stress ($\bar{\sigma}$) [2], where

$$\bar{\varepsilon} = \int_{l_i}^{l_f} \frac{\mathrm{d}l}{l} = \ln \frac{l_f}{l_i}, \quad \bar{\sigma} = \int_{A_i}^{A_f} \frac{\mathrm{d}F}{A},$$

and where l_f and l_i, are the final and the initial length of the one-dimensional sample, respectively.

Similar nomenclature holds with respect to the cross-sectional area A.

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