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Erratum

Erratum to: “Bending and stability analysis of gradient elastic beams” [Int. J. Solids Struct. 40 (2003) 385–400]

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(i) In Eq. (41) the expressions for the constants c_5 and c_6 should be replaced by

$$c_5 = -\frac{q}{2EI} \left(2 + \frac{1}{(c \cdot d)^2} \right) \tanh \left(\frac{L}{g} \right),$$

$$c_6 = \frac{q}{2EI} \left(2 + \frac{1}{(c \cdot d)^2} \right).$$

(ii) In Eq. (42) the expressions for the constants c_5 and c_6 should be replaced by

$$c_5 = -\frac{q}{2EI(c \cdot d)^2} \left[\frac{-2(c \cdot d)^2 \lambda + (2(c \cdot d)^2 + 1) \left(\lambda \cosh \left(\frac{L}{g} \right) + \sinh \left(\frac{L}{g} \right) \right)}{\lambda \sinh \left(\frac{L}{g} \right) + \cosh \left(\frac{L}{g} \right)} \right],$$

$$c_6 = \frac{q}{2EI} \left(2 + \frac{1}{(c \cdot d)^2} \right).$$

(iii) In Eq. (43) the expressions for the constants c_5 and c_6 should be replaced by

$$c_5 = -\frac{q}{EI(c \cdot d)}, \quad c_6 = \frac{q}{EI(c \cdot d)} \operatorname{sech} \left(\frac{L}{g} \right) \left(c \cdot d + \sinh \left(\frac{L}{g} \right) \right).$$

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(iv) In Eq. (44) the expressions for the constants c_5 and c_6 should be replaced by

$$c_5 = \frac{q}{2EI(c \cdot d)^2} \frac{\left(2(c \cdot d) - 2\lambda(c \cdot d)^2 - \lambda\right) \cosh\left(\frac{L}{g}\right) + 2(c \cdot d)^2 \lambda}{\lambda \sinh\left(\frac{L}{g}\right) - \cosh\left(\frac{L}{g}\right)},$$

$$c_6 = -\frac{q}{2EI(c \cdot d)^2} \frac{\left(2(c \cdot d) - 2\lambda(c \cdot d)^2 - \lambda\right) \sinh\left(\frac{L}{g}\right) + 2(c \cdot d)^2}{\lambda \sinh\left(\frac{L}{g}\right) - \cosh\left(\frac{L}{g}\right)}.$$

It should be pointed out that the above changes in constants c_5 and c_6 do not practically affect the results because the microstructural effect ($c \cdot d$) is very small and hence its influence on the responses, as depicted in Figs. 2 and 3, is also very small resulting in no changes within plotting accuracy.

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