Erratum: Modelling fatigue induced change in hyperelastic response of SBR/NR blends

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KEYWORDS

hyperelasicity, fatigue, ABAQUS, yeoh model, rubber, MATLAB, energy limiter

An Erratum on
Modelling fatigue induced change in hyperelastic response of SBR/NR blends

by Nambiar A and Mythravaruni P (2025). Front. Mech. Eng. 11:1514002. doi: 10.3389/fmech.2025.1514002

Due to a production error, there was a mistake in Equations 6, 8, 9 and the last, unnumbered equation as published. The corrected equations appear below.

$$\boldsymbol{\sigma} = \frac{2}{J} exp\left(\frac{-W^m}{\phi^m}\right)\left(C_1 + 2\,C_2\left(\overline{I_1} - 3\right) + 3\,C_3\left(\overline{I_1} - 3\right)^2\right)dev\left[\bar{B}\right] + \frac{2}{D} exp\left(\frac{-W^m}{\phi^m}\right)(J-1)\boldsymbol{I},$$

(6)

$$\sigma_{11engg} = \frac{1}{\lambda_1}\frac{2}{J} exp\left(\frac{-W^m}{\phi^m}\right)\left(C_1 + 2\,C_2\left(\overline{I_1} - 3\right) + 3\,C_3\left(\overline{I_1} - 3\right)^2\right)dev\left[\bar{B}\right]_{11}$$
$$+ \frac{1}{\lambda_1}\frac{2}{D} exp\left(\frac{-W^m}{\phi^m}\right)(J-1).$$

(8)

$$\sigma_{22} = \frac{2}{J} exp\left(\frac{-W^m}{\phi^m}\right)\left(C_1 + 2\,C_2\left(\overline{I_1} - 3\right) + 3\,C_3\left(\overline{I_1} - 3\right)^2\right)dev\left[\bar{B}\right]_{22} + \frac{2}{D} exp\left(\frac{-W^m}{\phi^m}\right)(J-1)$$
$$= 0.$$

(9)

$$\sigma_{11engg} = \frac{1}{\lambda_1} exp\left(\frac{-W^m}{\phi^m}\right)\left[\frac{2}{J}\left\{\left(0.99e^{-2.18}\frac{N}{N_f}\right) + 2\left(0.322e^{0.9267}\frac{N}{N_f}\right)\left(\overline{I_1} - 3\right)\right.\right.$$
$$\left.\left. + 3\left(0.187e^{0.5394}\frac{N}{N_f}\right)\left(\overline{I_1} - 3\right)^2\right\}dev\left[\bar{B}\right]_{11} + \frac{2}{D}\left(J-1\right)\right].$$

The publisher apologizes for this mistake. The original version of this article has been updated.