Erratum to: Peak velocities estimation for a direct five-step design procedure of inter-storey viscous dampers

Michele Palermo¹ · Stefano Silvestri¹ · Luca Landi¹ ·
Giada Gasparini¹ · Tomaso Trombetti¹

Published online: 14 December 2015

© Springer Science+Business Media Dordrecht 2015

Unfortunately, there are mistakes in Eqs. (20–23). The corrected equations are given here:

$$\begin{aligned} c_{NL,A} &= c_L \cdot (0.8 \cdot v_{\max,A} \cdot \cos \theta)^{1-\bar{\alpha}} \\ &= \bar{\xi} \cdot \omega_1 \cdot m_{tot} \cdot \left(\frac{N+1}{n} \right) \cdot \frac{1}{\cos^2 \theta} \cdot \left(M \cdot 0.8 \cdot \frac{S_a}{\omega_1} \cdot \frac{12N}{(2+5N+5N^2)} \cdot \cos \theta \right)^{1-\bar{\alpha}} \end{aligned} \quad (20)$$

$$\begin{aligned} c_{NL,B} &= c_L \cdot (0.8 \cdot v_{\max,B} \cdot \cos \theta)^{1-\bar{\alpha}} \\ &= \bar{\xi} \cdot \omega_1 \cdot m_{tot} \cdot \left(\frac{N+1}{n} \right) \cdot \frac{1}{\cos^2 \theta} \cdot \left(M \cdot 0.8 \cdot \frac{S_a}{\omega_1} \cdot \frac{2}{N+1} \cdot \cos \theta \right)^{1-\bar{\alpha}} \end{aligned} \quad (21)$$

where the factor $\cos \theta$ is applied to $v_{\max,A}$ and $v_{\max,B}$ to obtain the velocity along the inclined direction of the damper.

$$F_{NL,A} = c_{NL,A} \cdot v_{\max,A}^{\bar{\alpha}} = 0.8^{1-\bar{\alpha}} \cdot \bar{\xi} \cdot m_{tot} \cdot \frac{1}{n \cdot \cos \theta} \cdot M \cdot S_a(T_1, \bar{\xi}) \cdot \frac{12N(N+1)}{(2+5N+5N^2)} \quad (22)$$

$$F_{NL,B} = c_{NL,B} \cdot v_{\max,B}^{\bar{\alpha}} = 2 \cdot 0.8^{1-\bar{\alpha}} \cdot \bar{\xi} \cdot m_{tot} \cdot \frac{1}{n \cdot \cos \theta} \cdot M \cdot S_a(T_1, \bar{\xi}) \quad (23)$$

The online version of the original article can be found under doi:[10.1007/s10518-015-9829-8](https://doi.org/10.1007/s10518-015-9829-8).

✉ Michele Palermo
michele.palermo7@unibo.it

¹ Department DICAM, University of Bologna, Viale Risorgimento 2, 40136 Bologna, Italy