

ERRATUM

Erratum to: Local interaction simulation approach for modeling wave propagation in composite structures

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The original version of this article unfortunately contained mistakes. Equations 11, 12, and 13 were incorrect. The corrected equations are given below.

$$\begin{aligned}
 U^{i,j,k,t+1} = & -U^{i,j,k,t-1} + 2U^{i,j,k} \\
 & - \frac{2\chi}{8} U^{i,j,k} \sum_{\alpha,\beta,\gamma=\pm 1} [(\eta_x^2 \tilde{S}_{11} + \eta_y^2 \tilde{S}_{66} + \eta_z^2 \tilde{S}_{55})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [2\eta_x^2 \tilde{S}_{11} U^{i+\alpha,j,k} + 2\eta_y^2 \tilde{S}_{66} U^{i,j+\beta,k} + 2\eta_z^2 \tilde{S}_{55} U^{i,j,k+\gamma}] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y(\tilde{S}_{12} + \tilde{S}_{66})(V^{i+\alpha,j+\beta,k} - V^{i,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y(\tilde{S}_{12} - \tilde{S}_{66})(V^{i,j+\beta,k} - V^{i+\alpha,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{13} + \tilde{S}_{55})(W^{i+\alpha,j,k+\gamma} - W^{i,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{13} - \tilde{S}_{55})(W^{i,j,k+\gamma} - W^{i+\alpha,j,k})] \\
 & - \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y\tilde{S}_{16}(U^{i,j,k} - U^{i+\alpha,j+\beta,k})] \\
 & - \frac{2\chi}{8} V^{i,j,k} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_x^2 \tilde{S}_{16} + \eta_y^2 \tilde{S}_{26}] \\
 & - \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{36} + \tilde{S}_{45})W^{i,j,k}]
 \end{aligned}$$

$$\begin{aligned}
 & + \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_x^2 \tilde{S}_{16} V^{i+\alpha,j,k} + \eta_y^2 \tilde{S}_{26} V^{i,j+\beta,k}] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z\tilde{S}_{36}(W^{i,j+\beta,k+\gamma} + W^{i,j,k+\gamma} - W^{i,j+\beta,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z\tilde{S}_{45}(W^{i,j+\beta,k+\gamma} - W^{i,j,k+\gamma} + W^{i,j+\beta,k})] \\
 & + \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} \eta_z^2 \tilde{S}_{45}(V^{i,j,k+\gamma} - V^{i,j,k}) \tag{11}
 \end{aligned}$$

$$\begin{aligned}
 V^{i,j,k,t+1} = & -V^{i,j,k,t-1} + 2V^{i,j,k} \\
 & - \frac{2\chi}{8} V^{i,j,k} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_x^2 \tilde{S}_{66} + \eta_y^2 \tilde{S}_{22} + \eta_z^2 \tilde{S}_{44}] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [2\eta_x^2 \tilde{S}_{66} V^{i+\alpha,j,k} + 2\eta_y^2 \tilde{S}_{22} V^{i,j+\beta,k} + 2\eta_z^2 \tilde{S}_{44} V^{i,j,k+\gamma}] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y(\tilde{S}_{12} + \tilde{S}_{66})(U^{i+\alpha,j+\beta,k} - U^{i,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y(\tilde{S}_{12} - \tilde{S}_{66})(U^{i,j+\beta,k} - U^{i+\alpha,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{23} + \tilde{S}_{44})(W^{i,j+\beta,k+\gamma} - W^{i,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{23} - \tilde{S}_{44})(W^{i,j,k+\gamma} - W^{i,j+\beta,k})] \\
 & - \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y\tilde{S}_{26}(V^{i,j,k} - V^{i+\alpha,j+\beta,k})] \\
 & - \frac{2\chi}{8} U^{i,j,k} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_x^2 \tilde{S}_{16} + \eta_y^2 \tilde{S}_{26}] \\
 & + \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_x^2 \tilde{S}_{16} U^{i+\alpha,j,k} + \eta_y^2 \tilde{S}_{26} U^{i,j+\beta,k}] \\
 & - \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{36} + \tilde{S}_{45})W^{i,j,k}] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z\tilde{S}_{36}(W^{i+\alpha,j,k+\gamma} + W^{i,j,k+\gamma} - W^{i+\alpha,j,k})] \\
 & + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z\tilde{S}_{45}(W^{i+\alpha,j,k+\gamma} - W^{i,j,k+\gamma} + W^{i+\alpha,j,k})] \\
 & + \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_z^2 \tilde{S}_{45}(U^{i,j,k+\gamma} - U^{i,j,k})] \tag{12}
 \end{aligned}$$

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$$\begin{aligned}
W^{i,j,k,t+1} &= -W^{i,j,k,t-1} + 2W^{i,j,k} \\
&\quad - \frac{2\chi}{8} W^{i,j,k} \sum_{\alpha,\beta,\gamma=\pm 1} [\eta_x^2 \tilde{S}_{55} + \eta_y^2 \tilde{S}_{44} + \eta_z^2 \tilde{S}_{33}] \\
&\quad + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [2\eta_x^2 \tilde{S}_{55} W^{i+\alpha,j,k} + 2\eta_y^2 \tilde{S}_{44} W^{i,j+\beta,k} + 2\eta_z^2 \tilde{S}_{33} W^{i,j,k+\gamma}] \\
&\quad + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{23} + \tilde{S}_{44})(V^{i,j+\beta,k+\gamma} - V^{i,j,k})] \\
&\quad + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{23} - \tilde{S}_{44})(V^{i,j+\beta,k} - V^{i,j,k+\gamma})] \\
&\quad + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{13} + \tilde{S}_{55})(U^{i+\alpha,j,k+\gamma} - U^{i,j,k})] \\
&\quad + \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{13} - \tilde{S}_{55})(U^{i+\alpha,j,k} - U^{i,j,k+\gamma})] \\
&\quad - \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{36} + \tilde{S}_{45})(U^{i,j,k} - U^{i,j+\beta,k+\gamma})] \\
&\quad - \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{36} + \tilde{S}_{45})(V^{i,j,k} - V^{i+\alpha,j,k+\gamma})] \\
&\quad - \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\beta\gamma\eta_y\eta_z(\tilde{S}_{36} - \tilde{S}_{45})(U^{i,j,k+\gamma} - U^{i,j+\beta,k})] \\
&\quad - \frac{\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\gamma\eta_x\eta_z(\tilde{S}_{36} - \tilde{S}_{45})(V^{i,j,k+\gamma} - V^{i+\alpha,j,k})] \\
&\quad + \frac{2\chi}{8} \sum_{\alpha,\beta,\gamma=\pm 1} [\alpha\beta\eta_x\eta_y\tilde{S}_{45}(W^{i+\alpha,j+\beta,k} - W^{i,j,k})] \tag{13}
\end{aligned}$$