

ERRATA for

Analytical solution for plane stress/strain deformation of laminates with matrix cracks

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1. 3rd line after (37), $H_{N+1,j} = 0$ should be $H_{N,j} = 0$. If $i = N$, there is no H_{N+1} in (37). The corrected text is as follows:

For the first lamina, $i = 1$, $\tau_{xz}^{0,1} = 0$ and $H_{0,j} = 0$ on the bottom surface of the laminate because it is a free surface. For the mid-surface of the laminate, $i = N$, $\tau_{xz}^{N,N+1} = 0$ and $H_{N,j} = 0$ due to symmetry.

2. In (39), the 2nd term (negative) should be positive.
3. See the 4th term of (39), i.e., the 3rd square bracket. Inside the square bracket, the 2nd subscript of the 1st and 2nd terms (2) should be $N - 2$. Compare to the 2nd bracket. The corrected equation (39) is as follows:

$$\begin{aligned}
 E_x^i \frac{\partial^2 \hat{u}(i)}{\partial x^2} + \frac{[H_{i-1,1}^{-1} - H_{i,1}^{-1}]}{h_i} \hat{u}(1) + \frac{[H_{i,1}^{-1} - H_{i-1,1}^{-1} - H_{i,2}^{-1} + H_{i-1,2}^{-1}]}{h_i} \hat{u}(2) \\
 + \dots + \frac{[H_{i,N-2}^{-1} - H_{i-1,N-2}^{-1} - H_{i,N-1}^{-1} + H_{i-1,N-1}^{-1}]}{h_i} \hat{u}(N-1) + \frac{[H_{i,N-1}^{-1} - H_{i-1,N-1}^{-1}]}{h_i} \hat{u}(N)
 \end{aligned}
 \tag{39}$$

In our MATLAB code for (39):

i is the row number in K . j is the column number in K .

$K_{i,j}$ multiplies the displacement vector $\hat{u}(i)$.

Then we called $F_{ij} = H_{ij}^{-1}/h_i$.

If $i = j = 1$ then $K_{11} = -F_{11}$ from the 2nd term in (39).

Then, $K_{1,N}$, $K_{N,1}$, $K_{N,N}$ follow a similar pattern.