Errata

C.-K. Fang, Acoustic emission surface responses from mixed-mode cracking, *J. Nondestr. Eval.* 16:(4) 175–186 (1997).

Due to problems with international mail, the author did not have the opportunity to review the galley proofs. A number of corrections follow:

An analytical expression for the relationship between acoustic emission (AE) surface motion and displacement discontinuity of a finite crack extending in mixed mode was investigated based on an analogy to earthquake problems in seismology and crackings in fracture mechanics. The displacement field in an infinite body was expressed in terms of displacement discontinuity for a growing plane crack with arbitrary shape and orientation. The complete field response, including far-field, near-field, and intermediate-field motion has been studied. The displacement field in an infinite body was converted into the normal surface motion at the sensor site at the boundary of a half-space through local modification, considering the first reflection and mode conversion of the incident *P* and *S* waves at the traction-free boundary. The surface motion obtained is valid for finite crack propagation, while an algebraic equation for microcracking is given as a special case for illustration. Using these results, we will be able to analyze the fracture mode and relative location and orientation of sensor and crack plane according to the waveform obtained.

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In the first paragraph on p. 176, tenth line, delete the following sentence: "The AE waveforms were then used to characterize various relevant source mechanisms during fatigue."

In the last paragraph of p. 177, second line, the unit normal should be indicated by " $\hat{\nu}$ " rather than " ν ".

In the first paragraph, third line of p. 178, "wave" should be replaced by "waves."

In the caption of Fig. 9 " $\beta = 30^\circ$ " should be replaced by " $\beta = 90^\circ$ ".

In the conclusions on p. 185, the word "mixed-cracking" which appears in two places, should be replaced by "mixed-mode cracking."

In a number of figures, an underbar appears. This denotes a vector, which is represented by bold type in the text.

The following equations have been corrected as needed.

$$E_{3k}^{(1)} = \frac{-3\mu}{4\pi\rho C_3^2} [4\alpha_k\alpha_1\alpha_2 - \alpha_1\delta_{2k} - \alpha_2\delta_{1k}] \quad (2c)$$

$$\begin{aligned} du_{\nu}^{(p)}(\mathbf{x}, t) &= d\mathbf{u} \cdot \hat{\alpha} E^{(p)}(\theta_i), \\ du_{\nu}^{(sv)}(\mathbf{x}, t) &= d\mathbf{u} \cdot \hat{\zeta} E^{(sv)}(\theta_i) \end{aligned} \quad (9)$$

$$u_v^{(p)} = E^{(p)}(\theta_i) \alpha_k \left\{ \frac{E_{1k}^{(j)}}{r^4} \left[tH\left(t - \frac{r}{C_d}\right) - tH\left(t - \frac{r}{C_s}\right) \right] * \int_r \Delta u^{(j)}(\xi, t) dA(\xi) \right. \\ \left. + \frac{E_{2k}^{(j)}}{r^2} \int_r \Delta u^{(j)}(\xi, t - \frac{r}{C_d}) dA(\xi) + \frac{E_{3k}^{(j)}}{r^2} \int_r \Delta u^{(j)}(\xi, t - \frac{r}{C_s}) dA(\xi) \right. \\ \left. + \frac{E_{4k}^{(j)}}{r} \int_r \Delta \dot{u}^{(j)}(\xi, t - \frac{r}{C_d}) dA(\xi) \right\} \quad (13)$$

$$u_v^{(p)} = \frac{8S^{(j)} a_f^3}{3\mu} E^{(p)}(\theta_i) \alpha_k \left\{ \frac{E_{1k}^{(j)}}{2r^4} \left\{ \left[t^2 - \left(\frac{r}{C_d}\right)^2 \right] H\left(t - \frac{r}{C_d}\right) - \left[t^2 - \left(\frac{r}{C_s}\right)^2 \right] H\left(t - \frac{r}{C_s}\right) \right\} \right. \\ \left. + \frac{1}{r^2} [E_{2k}^{(j)} H\left(t - \frac{r}{C_d}\right) + E_{3k}^{(j)} H\left(t - \frac{r}{C_s}\right)] + \frac{3E_{4k}^{(j)}}{r} \delta\left(t - \frac{r}{C_d}\right) \right\} \quad (16)$$

$$u_v^{(sv)} = \frac{8S^{(j)} a_f^3}{3\mu} E^{(sv)}(\theta_i) \zeta_k \left\{ \frac{E_{1k}^{(j)}}{2r^4} \left\{ \left[t^2 - \left(\frac{r}{C_d}\right)^2 \right] H\left(t - \frac{r}{C_d}\right) - \left[t^2 - \left(\frac{r}{C_s}\right)^2 \right] H\left(t - \frac{r}{C_s}\right) \right\} \right. \\ \left. + \frac{1}{r^2} [E_{2k}^{(j)} H\left(t - \frac{r}{C_d}\right) + E_{3k}^{(j)} H\left(t - \frac{r}{C_s}\right)] + \frac{3E_{4k}^{(j)}}{r} \delta\left(t - \frac{r}{C_s}\right) \right\} \quad (17)$$

$$u_v = \frac{8S^{(j)} a_f^3}{3\mu r^3} \left\{ \frac{E_{1k}^{(j)}}{2r} [E^{(p)}(\theta_i) \alpha_k + E^{(sv)}(\theta_i) \zeta_k] \left\{ \left[t^2 - \left(\frac{r}{C_d}\right)^2 \right] H\left(t - \frac{r}{C_d}\right) - \left[t^2 - \left(\frac{r}{C_s}\right)^2 \right] H\left(t - \frac{r}{C_s}\right) \right\} \right. \right. \\ \left. + rE_{2k}^{(j)} [E^{(p)}(\theta_i) \alpha_k + E^{(sv)}(\theta_i) \zeta_k] H\left(t - \frac{r}{C_d}\right) + rE_{3k}^{(j)} [E^{(p)}(\theta_i) \alpha_k + E^{(sv)}(\theta_i) \zeta_k] H\left(t - \frac{r}{C_s}\right) \right. \\ \left. + 3r^2 E^{(p)}(\theta_i) \alpha_k E_{4k}^{(j)} \delta\left(t - \frac{r}{C_d}\right) + 3r^2 E^{(sv)}(\theta_i) \zeta_k E_{4k}^{(j)} \delta\left(t - \frac{r}{C_s}\right) \right\} \quad (18)$$

$$u_v(r, \omega) = \frac{16(1-\nu)\sigma^{(2)}a_f^3}{3\mu r^3} \left\{ [A_1 \cos \frac{\omega r}{C_s} + A_2 \sin \frac{\omega r}{C_s} + B_1 \cos \frac{\omega r}{C_d} + B_2 \sin \frac{\omega r}{C_d}] \right. \\ \left. + i[-A_1 \sin \frac{\omega r}{C_s} + A_2 \cos \frac{\omega r}{C_s} - B_1 \sin \frac{\omega r}{C_d} + B_2 \cos \frac{\omega r}{C_d}] \right\} \quad (21)$$

$$A_1 = \frac{E_{12}^{(2)}}{C_s \omega^2}, \quad A_2 = -\frac{E_{12}^{(2)}}{r \omega^3} - \frac{rE_{32}^{(2)}}{\omega} \\ B_2 = -\frac{E_{12}^{(2)}}{C_d \omega^2} \quad (22)$$

$$B_2 = \frac{E_{12}^{(2)}}{r \omega^3} - \frac{rE_{32}^{(2)}}{\omega} - 3r^2 E_{42}^{(2)}$$

$$|u_v(r, \omega)| = \frac{16(1-\nu)\sigma^{(2)}a_f^3}{3\mu r^3} \left\{ A_1^2 + A_2^2 + B_1^2 + B_2^2 + C \cos(\omega \Delta t + \Psi) \right\}^{1/2} \quad (23)$$