

相当量 $\sigma_{\text{eq}}$ 为

$$\sigma_{\text{eq}} = \sqrt{\frac{1}{2}(\sigma_1 - \sigma_2)^2 + \frac{1}{2}(\sigma_2 - \sigma_3)^2 + \frac{1}{2}(\sigma_3 - \sigma_1)^2 + 3\tau^2}$$

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而

$$\sigma_1 = \frac{1}{3}(\sigma_x + \sigma_y + \sigma_z) + \frac{1}{\sqrt{2}} \sqrt{\frac{1}{2}(\sigma_x - \sigma_y)^2 + \frac{1}{2}(\sigma_y - \sigma_z)^2 + \frac{1}{2}(\sigma_z - \sigma_x)^2 + 3\tau^2}$$

$$\sigma_2 = \frac{1}{3}(\sigma_x + \sigma_y + \sigma_z) - \frac{1}{\sqrt{2}} \sqrt{\frac{1}{2}(\sigma_x - \sigma_y)^2 + \frac{1}{2}(\sigma_y - \sigma_z)^2 + \frac{1}{2}(\sigma_z - \sigma_x)^2 + 3\tau^2}$$

$$\sigma_3 = \frac{1}{3}(\sigma_x + \sigma_y + \sigma_z) - \frac{1}{\sqrt{2}} \sqrt{\frac{1}{2}(\sigma_x - \sigma_y)^2 + \frac{1}{2}(\sigma_y - \sigma_z)^2 + \frac{1}{2}(\sigma_z - \sigma_x)^2 + 3\tau^2}$$

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