$$\bar{\sigma} = 2\bar{\varepsilon}_{zz}\left[c_{13}(s_{ij})\left(g(s_{ij}) \frac{I_1[\sqrt{f}]/\sqrt{f}}{\hat{E}(s_{ij})\, I_0[\sqrt{f}] - 2I_1[\sqrt{f}]/\sqrt{f}} - 1/2\right) + \frac{c_{33}(s_{ij})}{2} + f_1(s_{ij})\, f_2(c,\tau) \frac{I_0[\sqrt{f}] - 2I_1[\sqrt{f}]/\sqrt{f}}{2\left(\hat{E}(s_{ij})\, I_0[\sqrt{f}] - I_1[\sqrt{f}]/\sqrt{f}\right)}\right]$$

1. $\bar{\varepsilon}_{zz} = 1 - e^{-st_0}/s^2$, $\varepsilon_0 = \dot{\varepsilon} t_0$

2. $\begin{bmatrix} s_{rr} & s_{r\theta} & s_{rz} \\ s_{r\theta} & s_{rr} & s_{rz} \\ s_{rz} & s_{rz} & s_{zz} \end{bmatrix}$ $\quad s_{rr} = \frac{1}{E_{rr}}$, $s_{r\theta} = -\frac{\nu_{r\theta}}{E_{rr}}$, $s_{rz} = -\frac{\nu_{rz}}{E_{rr}}$, $s_{zz} = \frac{1}{E_{zz}}$

3. $c_{13}(s_{ij}) = \frac{s_{rz}}{\alpha(s_{ij})}$; $c_{33} = -\frac{s_{rr}+s_{r\theta}}{\alpha(s_{ij})}$, $\alpha(s_{ij}) = 2s_{rz}^2 - s_{zz}s_{r\theta} - s_{rr}s_{zz}$

4. $g(s_{ij}) = -\frac{(2s_{rz}+s_{zz})(s_{rr}-s_{r\theta})}{\alpha(s_{ij})}$

5. $f_1(s_{ij}) = -\frac{(2s_{rz}+s_{zz})}{2}\,\frac{2(s_{rr}s_{zz}-s_{rz}^2)}{\alpha(s_{ij})}$

6. $f_2(c,\tau) = 1 + c\ln\frac{1+s\tau_2}{1+s\tau_1}$

7. $\hat{E} = \frac{2(s_{rr}s_{zz}-s_{rz}^2)}{\alpha(s_{ij})}$

8. $f = \frac{r_0^2 s}{\hat{E} k f_2(c,\tau)}$

$\bar{\sigma}$ - Laplace transform of the average axial stress

$\bar{\varepsilon}_{zz}$ - Laplace transform of the axial strain

E_{rr}, $\nu_{r\theta}$, $t_g = r_0^2 / \hat{E}K$, c, τ_1, τ_2 - unknown material parameters to be determined by the experiment fitting

$\mathcal{L}^{-1}(\bar{\sigma})$ - inverted $\bar{\sigma}$ in time domain

I_0 and I_1 - 1st and 2nd-order modified Bessel functions