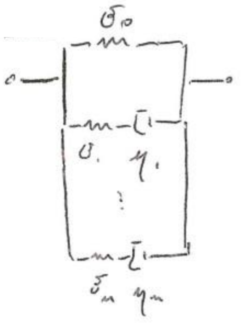

$$\bar\sigma_0 = E_0\,\bar\varepsilon$$

$$\begin{cases} \bar\sigma_1 = E_1\,\bar\varepsilon_E = \eta_1\, s\,\bar\varepsilon_\eta \\ \bar\varepsilon_E + \bar\varepsilon_\eta = \bar\varepsilon \end{cases}$$

$$E_1\left(\bar\varepsilon - \bar\varepsilon_\eta\right) = \eta_1\, s\,\bar\varepsilon_\eta$$

$$E_1\,\bar\varepsilon = \left(E_1 + \eta_1 s\right)\bar\varepsilon_\eta$$

$$\varepsilon_\eta = \frac{E_1}{E_1 + \eta_1 s}\,\bar\varepsilon$$

$$\bar\sigma_1 = \frac{E_1\,\eta_1\, s}{E_1 + \eta_1 s}\,\bar\varepsilon$$

$$SLS \rightarrow H_{SLS}(s) = \frac{\bar\sigma}{\bar\varepsilon} = \frac{\bar\sigma_0 + \bar\sigma_1}{\bar\varepsilon} = E_0 + \frac{E_1\,\eta_1\, s}{E_1 + \eta_1 s}$$

$$\boxed{GM \rightarrow H_{GM}(s) = E_0 + \sum_{i=1}^{n} \frac{E_i\,\eta_i\, s}{E_i + \eta_i s}}$$

$$\boxed{E^*_{GM}(f) = E'(f) + i\,E''(f)}$$

$$\sum_{i=1}^{n} \frac{E_i\,\eta_i\, s}{E_i + \eta_i s} \xrightarrow{s = i2\pi f} \sum_{i=1}^{n} \frac{E_i\,\eta_i\,(i2\pi f)}{E_i + \eta_i\,(i2\pi f)}$$

$$\begin{cases} (a+b)(a-b) = a^2 - b^2 \\ i^2 = -1 \end{cases}$$

$$\frac{E_i\,\eta_i\,(i2\pi f)}{E_i + \eta_i\,(i2\pi f)} \cdot \frac{E_i - \eta_i\,(i2\pi f)}{E_i - \eta_i\,(i2\pi f)} = \frac{4E_i\,\eta_i^2 f^2\pi^2 + i\,2E_i^2\,\eta_i\, f\pi}{E_i^2 + 4\eta_i^2 f^2 \pi^2}$$

$$E^*_{GM}(f) = \underbrace{\left(E_0 + \sum_{i=1}^{n} \frac{4E_i\,\eta_i^2 f^2\pi^2}{E_i^2 + 4\eta_i^2 f^2\pi^2}\right)}_{E'(f)} + i\underbrace{\left(\sum_{i=1}^{n} \frac{2E_i^2\,\eta_i\, f\pi}{E_i^2 + 4\eta_i^2 f^2\pi^2}\right)}_{E''(f)}$$