I suggest the last inversion test before proceeding to the main problem of the estimation of poroviscoelasic parameters.

$$f'=f/\mu \quad \mu=\frac{E}{2(1+\nu)}$$

$$\widetilde{f^{\prime}}=\frac{3I_0(\sqrt{s})-4C_0I_1(\sqrt{s})/(\sqrt{s})}{I_0(\sqrt{s})-C_0I_1(\sqrt{s})/(\sqrt{s})}\tilde{\varepsilon}_{zz} \text{ where } \tilde{\varepsilon}_{zz}=[1\text{-}\exp(\text{-}st_0)]\varepsilon_0/s^2 \text{ , } \varepsilon_0=\dot{\varepsilon}_0\, t_0 \text{ , and } C_0=\frac{(1-2\nu)}{1-\nu}$$

Asymptotes: $f'\to 0$ if t→0 and $f'\to 2(1+\nu)\varepsilon_0$ if $t\to\infty$

Plot the inversion vs. t/t_g. Use the following parameters $\nu=0,\ \dot{\varepsilon}_0=10^{-3}s^{-1}, t_0=0.1t_g$