

## Stress dependent relaxation time in large deformation

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<b>Abstract</b>	<p>This work presents a new strategy to model stress dependent relaxation process in large deformation. The strategy is relied on the fact that in some particular soft materials undergoing large deformation, e.g., elastomers, rubbers and soft tissues, the relaxation time depends strongly on stress levels. To simplify the viscoelastic model, we consider that the relaxation time is the function of previous elastic deviatoric stress state experienced by materials during loading. Using the General Maxwell Model (GMM), we simulate numerically conditions with the constant and the stress dependent relaxation time for uniaxial tension and compression loading. Hence, it can be shown that the proposed model herein not only can represent different relaxation time for different stress level but also maintain the capability of the GMM to model hysteresis phenomena.</p>
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