THE NON-LINEAR VISCOELASTIC MINDLIN-TIMOSHENKO THIN PLATE MODEL

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The more exact strain-displacement relation is given by

$$\epsilon_{ij}(u) = \frac{1}{2}\left(\frac{\partial u_i}{\partial x_j} + \frac{\partial u_j}{\partial x_i} + \frac{\partial u_k}{\partial x_i}\frac{\partial u_k}{\partial x_j}\right),$$

including the non-linear members which are usually neglected in the small displacement theory. In the elastic case the equations of the motion are obtained assuming the displacements being still in the interval of the linear stress-strain dependence characterized by the Hooke's law and setting the member σ_{33} of the stress tensor equal to zero. In a similar way we shall set now the generalized equations for the visco-elastic case and we shall bring some considerations about the existence of its solution.