

A Comparison of Nonlinear Material Models Used in Pavement Response Modelling

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The numerical modeling of pavement responses is very much influenced by the structural properties of the pavement. The structural properties are modeled by material models. A clear understanding of pavement responses with respect to the material models is necessary to evaluate the accuracy of prediction. This paper aims at investigating the application of inverse modeling techniques to find the material parameters of three different models using Repeated Load Triaxial test data. The method of estimating material parameter values is based on least-squares regressions, coupled with a finite element technique. Computations were performed using ABAQUS in MATLAB platform. The results of the computations are compared to each other. Numerical simulations and comparisons show a good agreement between estimated values (modulus, strain, and stress deflection) obtained using three different models.

Keywords: *Pavement response, Finite element modelling, USDFLD, UHYPEL.*