7th African Conference on Non Destructive Testing (ACNDT) & the 5th International Conference on NDT and Materials Industry and Alloys (IC-WNDT-MI)

2016

Impact resolution methods of contact on themechanical behavior of structures

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Abstract : Contact problems are inherently non-linear due tothe instability of the contact surface. The analysis of theseproblems has a great importance in the industrial applications. Inmany industrial processes of working such as stamping, rollingand forming, the phenomena of contact play an essential role.The numerical simulation of these problems can raise seriousdifficulties on the level of modelling and computing time.There are various numerical methodsfor managing contact between two solid or between a solidand a rigid surface. Several contacting methods are used in thetreatment of contact problems. The method of penalty andlagrangian method that exists in finite element codes such asANSYS,ABAQUS,...In order to remove the advantages and disadvantages of thesemethods, a comparative analysis on the mechanical behavior ofstructure based on a case study is the subject of this study.

Keywords : contact, methods, penalties, AugmentedLagrangian, mechanical behavior.