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# Impact resolution methods of contact on the mechanical behavior of structures

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**Abstract :** Contact problems are inherently non-linear due to the instability of the contact surface. The analysis of these problems has a great importance in the industrial applications. In many industrial processes of working such as stamping, rolling and forming, the phenomena of contact play an essential role. The numerical simulation of these problems can raise serious difficulties on the level of modelling and computing time. There are various numerical methods for managing contact between two solid or between a solid and a rigid surface. Several contacting methods are used in the treatment of contact problems. The method of penalty and Lagrangian method that exists in finite element codes such as ANSYS, ABAQUS, ... In order to remove the advantages and disadvantages of these methods, a comparative analysis on the mechanical behavior of structure based on a case study is the subject of this study.

**Keywords :** contact, methods, penalties, Augmented Lagrangian, mechanical behavior.