Análisis teórico-práctico de esfuerzos y por elementos finitos de un ensayo de tracción [

2018

text (article)

Analítica

This work presents a comparison between the methods theoretical, experimental and numerical by simulation with finite elements, characterizing the material by means of experimental tests under theoretical-practical analysis and finding a numerical model by finite elements, that the behavior of a steel alloy governs, put under to a tension test. In this document is to the experimental stress analysis and simulation, fitting a model of the material in software ANSYSAPDL, from the results of the tension tests and comparing as much qualitatively as quantitatively the behavior of the steel alloy. To fit the numerical model by simulation, from the behavior of the material in the experimental tests, is of great advantage to realize design of elements or mechanical systems being used this material, from the software of finite elements, using a model of the material without needing realizing more experimental tests, which are expensive in the investigation and the design in engineering. This work is of great contribution, since nowadays we can count on new materials and different applications, where it is important to know right way the mechanical properties and the behavior of the same to define a better use in the industry or the investigation. Of this same form they by means of a numerical model by simulation infinite elements from theoretical-practical analysis of the experimental datas can be analyzed hyperelastic or elastoplásticos materials and be fit, depending the percentage on deformation, to be able to fit them according to the numerical models of the material in software for each type of behavior
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