

ABSTRACT

A bridge is a structure built to span physical obstacles without closing, the way underneath such a body of water, valley or road, for the purpose of providing passage over an obstacle. There are many types of bridges like beam bridge, truss bridge, cantilever bridge, arch bridge. On these many analysis like static analysis, linear analysis, non-linear analysis, transient analysis and thermal analysis can be done in ANSYS. A transient analysis, by definition, involves loads that are a function of time. In the Mechanical application, you can perform a transient analysis on either a flexible structure or a rigid assembly. This analysis is done using FEA (finite element analysis), This is a numerical method for solving problems of engineering and mathematical physics, to solve the problem it subdivides a large problem in to smaller, simpler parts that are called finite elements. The simple equations that model these finite elements are then assembled into a larger system of equations FEA uses various methods from calculus of variations to approximate a solution by minimizing an associated error function.

At present we are dealing with the transient analysis of a bridge, when a vehicle moves on a bridge, the loading conditions differ from place to place. It shows different displacement at different places on a bridge. A bridge shows an obvious displacement at different places based on the loading conditions, here we consider reinforced concrete material it has properties such as Poisson's ratio, young's modulus and load which are given as input to study the displacement.