

## **Analysis of Nonlinear Curved Spring When Applying Nonlinear Load**

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### **Summary**

A nonlinear curved spring has a free form shape. In this study, the curved beam is applied a nonlinear load, the load on the spring is pointed to a certain point of the space. This curved spring can be used in an orthosis. A certain load-deformation relation of curved spring which used in orthosis can assist the subject wearing the orthosis to climb the stairs. The analysis of the curved spring should be non-linear due to the applied load is a constant but its direction is point to a certain point. The deformation is hard predicted correctly for this spring. The purpose of this study is by using the Newton's method with ANSYS software to calculate the deformation of the spring. Finally, these results indicate that the Newton's method is efficacious to find the relation between load and deformation.

