**Fatigue Analysis And Design Optimization Of Excavator Bucket**

**Abstract**

There is rapid growth in the earth moving machine industries as the construction work is rapidly growing is assured through the high performance of construction machines. This paper focuses on the evaluation method of digging forces required to dig the terrene for light duty construction work. This methods gives the force calculation and further it is used for the carrying out the fatigue analysis to calculate fatigue life of bucket and its failure. Further the work regarding the optimization of bucket to give maximum fatigue life for the digging at the desired force conditions. An analytical approach provided for static force analysis of excavator bucket.

Keywords: digging forces, fatigue analysis of excavator bucket, optimization of excavator bucket.