

Cutting forces affecting cutting tool in metal cutting are one of the important parameters necessarily to know tool failure and to optimize the cutting parameters. It is known that the flank wear describing the tool life is formed with mechanical and thermal interaction between cutting tool and workpiece. In present study, the cutting stress analyses were carried out from two aspects. Firstly, changing in cutting stress distribution with wear band width is determined with modeling of between 0.3 mm and 0.9 mm wear band values by finite element method using Ansys 10.0 programme. Secondly, the effect of the some important cutting parameters such as cutting depth, feed rate, and approach angle on the cutting stress was performed in present analyses. The results showed that stresses increase to parallel an increase with flank wear value. The cutting depth has more a significant effect on the tool stresses than feed rate parameter in respect of von-Mises stresses. Also, cutting stresses decreased with an increase in the approach angle.