MODELING AND SIMULATION OF THE COLD ROLLING PROCESS

K.Slimani, H.Bendjama, H.Katib, H.TAYOUB, S.AOUABDI

Abstract: The prediction of the power and torque, the stresses and the speeds is essential to drive in an optimal way an industrial operation like that of rolling. The prior knowledge of its mechanical quantities allows the good development of a rolling program. We present in this work a mathematical model of sheet rolling in the elastoplastic frame. This model is based on the slices method, the latter method is conventionally used in the rigid plastic frame independent speeds. We started by developing a model based on the slices method under MATLAB environment. In the second step, we introduced in this model the elasticity of the cylinders and the comparison of the results with another developed model based on the finite element method.

Keywords: modeling, simulation, rolling, Slice method.