

Modeling of Austenitic Stainless Steel during Face Milling Using Response Surface Methodology

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Abstract : The objective of this work is to model the output responses namely; surface roughness (Ra), cutting force (Fc), during the face milling of the austenitic stainless steel X2CrNi18-9 with coated carbide tools (GC4040). For reason, response surface methodology (RSM) is used to determine the influence of each technological parameter. A full factorial design (L27) is chosen for the experiments, and the ANOVA is used in order to evaluate the influence of the technological cutting parameters namely; cutting speed (Vc), feed per tooth, and depth of cut (ap) on the out-put responses. The results reveal that (Ra) is mostly influenced by (fz) and (Fc) is found considerably affected by (ap).

Keywords : austenitic stainless steel, ANOVA, coated carbide, response surface methodology (RSM)

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