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DETERMINATION OF THE REGRESSION RELATION OF THE CUTTING FORCES FOR TURNING OF THE STAINLESS STEEL 20MoCr130

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Abstract: The paper presents a series of experimentally found data concerning the turning of the stainless steel 20MoCr130 and the ways and means to determine the cutting forces with respect to the specific working conditions. The experimental data and their subsequent processing represent the contribution of the authors to the estimation of the polytropic exponents and to the assessment in terms of structure of the cutting forces equation. Afterwards, the paper presents the graphs for the variation of the cutting force components with the parameters of the cutting technology. The obtained results can be implemented in further research, in order to increase the productivity of steel machining.
Keywords: turning, cutting force, stainless steel, polytropic exponents.