

CRITERIAL APPROACH TO CONSTRUCTING EMPIRICAL MODELS OF CUTTING

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A model using criterial equations to calculate tool parameters depending on the governing factors is proposed. The model is based on Kronenberg dimensional analysis providing empirical relationships between temperature and tool durability and variables that characterize the cutting process and blank properties. In order to estimate the adequacy of the model it is compared with the experimental data described by traditional empirical relationships in the form of exponential equations with a set of table coefficients, and the results of comparison are presented.

Empirical models of cutting, dimensional analysis, criterial relationships, durability, cutting temperature.

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