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**INFLUENCE OF DIMENSION OF INK-PRINTING SYSTEM OF PARALLEL STRUCTURE ON UNIFORMITY OF AUTOTYPE TONE REPRODUCTION**

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***Research methodology.*** *The methodological research base is made by the balance equation of modulated ink flows of a printing system. To solve this problem we have applied the theory of signals to analyze ink flows modulated by raster printing plates, graphs to describe modulated ink flows and the theory of errors to determine the unevenness of autotype tone reproduction.*

***Results.*** *In the conducted study, we have worked out the mathematical model of a short ink-printing system of parallel structure of different dimensions, which describes the dependence of unevenness of autotype tone reproduction, and developed the simulation model in the package Simulink. The characteristics of unevenness of autotype tone reproduction for different dimensions that in the system of the eighth dimension are placed from +41.72 to –33.6%, and for the fifth dimension systems — within +10.02 and –20.58%. It has been established that the increase in dimensions of an ink-printing system causes an increase in unevenness of autotype tone reproduction, particularly at the beginning of the range and gray shades of bitmap.*

***Novelty.*** *Scientific novelty of the results is that the unevenness of autotype tone reproduction has been quantified, which is determined by the deviation of ink thickness at a given range from a given line value; and it has been found that the increase in dimension of ink-printing system causes an increase in non-uniformity, especially at the beginning and end of the interval.*

***The practical significance.*** *The determined limits of the unevenness of autotype tone reproduction at the range can be used to assess the quality of ink-printing systems of different dimensions and serve as a basis for correcting the nonlinearity of tone reproduction in the preparation stage of images for screening.*