MATHEMATICAL MODEL OF CLASSIFICATION OF OBJECTS OF PRODUCTION

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In conditions of the automated low-volume production of details of mechanical engineering, it is appropriate to use the group method of production, based on the designing of the complex product, which includes all structural members of details from the group under formation. The creation of groups, similar in topology and magnitudes of the details, belongs to the problems of automatic classification. To solve those problems, it is appropriate to use the image discrimination theory mathematical apparatus [1]. Concrete detail is displayed by her image through the kit of chosen constructional technological signs, which appears as point in feature hyperspace. The dimension m of the feature hyperspace differs according to numerical composition of signs and their dividing qualities, which can be estimated by one of informational content measures, for example, by means of entropy minimization; an expansion in system of orthogonal functions (for example, in a row or at acyclic casual process to use Fourier decomposition Karunena-Loeva); or maximization of divergention [1]. Procedure of classification of images is carried out by means of algorithm of recognition with the self-training, constructed on use of a method of potential functions [2]. Association of images of one class in the isolated groups rather removed from each other is made without information on what group every image belongs. Degree of remoteness of groups is characterized by a matrix of measures of proximity. The least remote groups are exposed to association, thus the maximum element of a matrix is accepted to criterion of geometrical proximity. Compactness of the created group is defined by a measure of proximity of the images which have entered into it which is a diagonal element of a matrix.Compactness of the created group is defined by a measure of proximity of the images which have entered into it which is a diagonal element of a matrix. The minimum total costs of a material deleted at final processing and the stamping tool are taken for criterion of quality of grouping for forming of the complex forging containing all constructive elements of details of group.

References.

1. *Tou J., Gonzalez R.* Pattern recognition principles. Massachusetts, 1974. - 411 pp.
2. *Sosenuskin E.N.* Decision-making at automatic classification of cold and semi-hot volumetric forged details in mechanical engineering// Blanking productions in mechanical engineering , №5, 2006. - Pp. 20-27.