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DEVELOPMENT OF THE ALGORITHM FOR THE FORMATION OF EMPIRICAL MODEL FOR THE TERNARY MIXTURE EXPERIMENTS

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In the mechanical and electrical legure properties research process an important role is three-component systems. Regression analysis allows that on the basis of experimental results define mathematical models depending on the size of the mole fraction of the individual components of the mixture. To carry out the process of regression analysis and selection of adequate regression model, it is necessary to implement following stages:

- Input of experimental data
- The summary statistics of possible mathematical models
- Choice of stochastic models
- ANOVA analysis - assessment of the significance of the model
- Assessment of the adequacy of the model
- The interval estimate of model parameters
- Diagnostic models and, if necessary, the transformation model and repeated cycles of selection and assessment of the transformed model
- Interval estimation of regression function
- Graphic interpretation and interpretation of the model.

This paper presents an algorithm for the selection, evaluation and diagnosis of optimal mathematical model for the three-component system.

Keywords: algorithm, ternary mixture experiments, design of experiments, regression models