COMPARISON OF CONJUGATE GRADIENT METHODS FOR DEVELOPING THE MULTIPLE LINEAR REGRESSION MODEL FOR RUBBER YIELD IN MALAYSIA

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DECLARATION BY CANDIDATE

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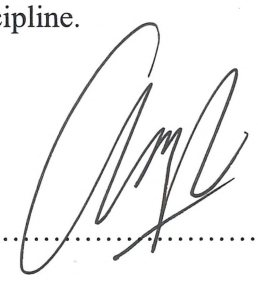

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ABSTRACT

Regression analysis is known as a statistical technique for estimating the relationship between variables which have reason and result relation. In this research, regression models with one dependent variable and more than one independent's variable called multiple linear regression (MLR) is been used to produce a regression model for rubber yield in Malaysia. Meanwhile, Conjugate Gradient (CG) method is used to solve regression parameter through the normal equation since it is a well-known method due to the simplicity, easiness and low memory requirement. The selected CG formulas are from classical CG which is Fletcher-Reeves (FR), Polak-Ribiere-Polyak (PRP), Hestenes-Stiefel (HS), and Rivaie et al. (RMIL). Then, the result from MLR, selected variants of CG method and inverse matrix method will be compared. Based on the result, beta coefficient of CG-FR proved to be best method to produce the best regression model with the least root mean square error value.

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