# Prediction of Crude Oil Prices using Support Vector Regression (SVR) with grid search – cross validation algorithm

**Abstract:**

The aim of this research is forecasting crude oil prices using Support Vector Regression (SVR). Algorithm to determine the optimal parameters in the model using the SVR is a grid search algorithm. This algorithm divides the range of parameters to be optimized into the grid and across all points to get the optimal parameters. In its application the grid search algorithm should be guided by a number of performance metrics, usually measured by cross-validation on the training data. Therefore, it is advisable to try some variations pair hyperplane parameters on SVR. Based on analysis calculation of accuracy and the prediction error using the training data generating R2 99.10868% while the value of MAPE by 1.789873%. The data testing generates R2 96.1639% while the value of MAPE by 1.942517%. This indicates to the data of testing using a linear kernel or accuracy of prediction accuracy results are quite large. Best model using the SVR has been formed can be used as a predictive model of crude oil prices. The results obtained showed crude oil prices from period 1 up to 10 experiencing decline.