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**APPLICATION OF KALMAN FILTER**

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## ABSTRACT

Kalman filter is a useful tool in every field. It can be use to estimate the present, past and the future of a state that is given, for example a trajectory problem, and a dynamic state of car accelerator. It also uses as stochastic control and minimizes the error that produces by the data taken. Kalman filter is a set of mathematical equation that provides a method for constructing an optimal estimate of the system state. It is used to predict the state of the process and the mean covariance of the data. Each time it will involve a pair process which is the time update and measurement update. This filter can be used for smoothen the graph by reducing the mean square covariance that cause by the noise. For this project, a source will be built for analyzing the data that is taken. The result of the experiment, show that the Kalman filter is use to smoothen the data which had a noise or a noisy data. Beside that, the Kalman filter also show how well the filter filtered out the noisy data in a simulation which involve car acceleration. The Kalman filters have proved to be a useful tool in real time application, as the result show how well the Kalman filter performance.