ESTIMATION POSITION OF TWO WHEELS INVERTED PENDULUM MOBILE ROBOT USING ENSEMBLE KALMAN FILTER METHOD

Student's Name	: **Aditya Dharmawan**
NRP	: **1206 100 032**
Departement of	: **Mathematics FMIPA-ITS**
Supervisors	: **Subchan, Ph.D**
	DR. Erna Apriliani, M.Si

ABSTRACT

The Two Wheeled robot with inverted pendulum or commonly called as Two Wheels Inverted Pendulum Mobile Robot is a robot which its works is like a inverted pendulum. There are many research about this two-wheeled robot with inverted pendulum, one of which is in the field of the determination or estimation of robot position on the track. This is very useful so that the robot can follow the existing path with the right position (not out of the way). Therefore we need a method to estimate the position of the robot to run follow a predetermined trajectory. In the final position, a two-wheeled robot inverted pendulum was estimated by using the Ensemble Kalman Filter (EnKF). Which Ensemble Kalman Filter (EnKF) method was chosen, because this method can be used to estimate a linear dynamic model and non linear dynamic models.

Keywords: *estimate the position, Kalman Filter, Ensemble Kalman Filter (EnKF), two wheels inverted pendulum mobile robot.*

[“ Halaman ini sengaja dikosongkan. “]