

ABSTRACT

Props in the basic control system laboratory worth around 300 million rupiah and there is only 1 unit makes the practicum process not conducive. The availability of the props is very important for a laboratory to support students in understanding the methods learned during class.

The purpose of the research is to apply fuzzy method on ball on plate mechanical system. Fuzzy method is used to stabilize the ball on plate system. The ball on plate props adjust the position or location of the ball at the desired coordinates on a flat plane. The position is obtained by setting the coordinates in the form of X pixels and Y pixels as set points. The inputs are the form of coordinates obtained from the webcam through image processing methods and sent serially to the microcontroller. The target output is set based on the desired set point.

From the results of the experiment and the implementation of the tools made, ball on plate can move the ball at the desired set point. The response when set point 250 has 2.69% error on the X-axis and 3.44% error on the Y-axis. The response results on the X and Y coordinates can be seen in real time on the interface in MATLAB.

Keywords: *Ball on Plate, Fuzzy Logic, Webcam, Servo Motors*