WIND VELOCITY SHORT-TERM PREDICTION USING FUZZY LINEAR REGRESSION METHOD FOR GETTING INPUT OF WIND TURBINE CONTROLLER

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ABSTRACT

Today the use of alternative renewable energy such as wind increasingly as fossil fuels which human primary needs become decreasingly. Pembangkit Listrik Tenaga Bayu (PLTB) is a power plant that converts wind energy into electrical energy by using wind turbines. Prevailing winds are not constant but always changing so it may cause a generated power of PLTB is not constant. Wind velocity short-term prediction using Fuzzy Linear Regression is one solution to get constant input of wind turbine by calculating the average of wind velocity so that the generated power of PLTB will be constant. Average wind velocity increases and decreases in a given time will cause the power generated of PLTB also changed certain time and still be at a constant value. Based on the simulation results using the data without any reduction obtained the average value of error is 0.08 and the highest constant power output is 2,432 MW. While the average value of error of the prediction results of wind velocity using data with reduction is 2.06 and the highest constant power output is 1,346 MW.

Keywords : Constant Power Output, Fuzzy Linear Regression, Wind, Wind Velocity
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