



WIND POWER SYSTEMS WITH HYDROSTATIC TRANSMISSION FOR CLEAN ENERGY

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Abstract

Wind energy is being used extensively in various areas as an economically and environmentally friendly type of energy. The number of wind farms is continuously developing and it is foreseen a three time increase in contribution of wind energy to European electricity consumption for next twenty years. A complementary trend, of large potential and expectations, is the revival of the small wind turbines (SWT) (<100 kW), suitable for operating in rural areas with moderate winds. In the case of SWT one may use the hydraulic system to convey energy to the ground. When one consumer is used only, the structure of the hydraulic system may be conventional one meaning with impressed flow. For the case of two or more consumers with different loads, the secondary control concept is proposed which means a system with impressed pressure. In this paper, a model for the simulation of the hydraulic system with impressed flow was tested and the step response is presented. The proposed model may be used as an instrument for the design of a hydraulic system with impressed flow.

Key words: clean energy, hydrostatic transmission, renewable sources, secondary control, wind power

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