

ENERGY HYBRID SYSTEMS: CONCEPT, ANALYSIS, CONTROL AND APPLICATIONS

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Abstract

Hybrid systems are dynamical systems involving explicitly and simultaneously phenomena or models of continuous dynamic type events. These systems are typically composed of continuous processes interacting with or supervised by discrete processes. They also result from the hierarchical organization of control / command complex, or the interaction of discrete planning algorithms and continuous control algorithms. This type of dynamic systems including state variables and continuous and discrete coupled simultaneously in both continuous and discrete time. Researchers in controlling such systems are closest to its description in control systems typically used in the industry due to use, for example, PLCs. In this research paper, hybrid system model is developed and analyzed for renewable energy. The hybrid systems with base in the renewable energy are modeled to compare many different design options based on their Technical and Economic Merits. The data processing was also analyzed using the computer model, HOMER. The departure Were elements: the electric demand of the desalination plant, the technical specifications of the equipment, as well as the potentials of solar radiation and the speeds of wind of the analyzed region which is hypothetical.

Keywords : hybrid, energy sources, control, stability.

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