

Abstract

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ON-LINE PREDICTION OF PHOTOVOLTAIC OUTPUT POWER UNDER CLOUDY SKIES BY USING FUZZY LOGIC

This paper prescribes an on-line prediction technique of the photovoltaic output power under cloudy skies based on artificial intelligence. The technique takes advantage of the fact that fuzzy logic can accurately simulate nonlinear phenomena using a set of IF-THEN rules. These rules are fired partially and in-parallel. This means that, at any time, only a very limited subset of the rules is used. This enables a quick, on-line estimation of the output power of the photovoltaic cells based on the analysis of the image of the cloudy sky.