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(57) Abstract :
ABSTRACT: Title: A System and Method For Detecting Cloud Transients, Cloud Density Using Optimized Solar Tracking System The present disclosure relates to a system and method for detecting cloud switching transients (surges) and cloud structure analysis using optimized dual axis solar tracking (ODAST). ODAST 103 system is comprised of optimized Cadmium sulphide light dependent resistor (CdS-LDR) 102 light sensors, Minimum dull intensity of sun light (MDISL)104, and Multi state machine 105execution process of control unit. Maximum intensity of the sun is captured using ODAST 103 system in low illuminance conditions. Optimization process of CdS- LDR light sensor is designed from CdS-LDR characteristic curve of Intensity and photo- resistance using power approach. The power gained by ODAST 103 system is 50.63% more than the fixed panel. The generated power of ODAST 103 system is analyzed under shading effect of cloud. All data variables are collected in server file for every 23s of time interval using real- time virtual instrumentation Parallax Data Acquisition tool. Cloud sudden transients (surges) 107 are detected using sudden high-power impulses (PHI) and temperature humidity index(THI) variables. Cloud structure 108 is analyzed with cloud density, Direct normal intensity during cloudy (DNI cloudy).

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