

THE STAND-ALONE HELIOSTAT FIRST RESULTS

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ABSTRAC:

An innovative approach to reducing heliostat field costs relies on the autonomous concept. In this way, one 70m², "T" classical glass-metal heliostat has been adapted to include all the new components to work using the stand-alone concepts. The PV system is able to drive two sun-tracking DC motors between 5 to 24Vdc, 0 to 15A. The heliostat communicates with the control room at 400m distance by using a radio-modem working with 9600bauds. The heliostat is sensorized with anemometer, wind switcher, light and ambient temperature sensors. With these sensors the heliostat knows the ambient conditions for self-protection decisions. A PV panel integrated within heliostat reflecting surface, eliminates cabling and other elements required to conventional power supply. Cabling for communications between master control and local control can be substituted by radio-modem.

During 1998 the whole design of the autonomous configuration and hardware collection and installation has been completed. During 1999 an extensive test campaign is serving to evaluate the reliability of the concept and to optimize the PV and radio-modem costs.

We will expose the results of this test campaign offering the economical conclusions comparing the autonomous concept extra cost with the conventional civil work, cabling, channels and electric elements costs.