

Two Degree of Freedom Spherical Mechanism Design for Exact Sun Tracking

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Abstract : Sun tracking systems are the systems following the sun ray by a right angle or by predetermined certain angle. In this study, we used theoretical trajectory of sun for latitude of central Anatolia in Turkey. A two degree of freedom spherical mechanism was designed to have a large workspace able to follow the sun's theoretical motion by the right angle during the whole year. An inverse kinematic analysis was generated to find the positions of mechanism links for the predicted trajectory. Force and torque analysis were shown for the first day of the year.

Keywords : sun tracking, theoretical sun trajectory, spherical mechanism, inverse kinematic analysis

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