University of Reading

Session III:
Room 8

FORWARD KINEMATICS OF A '3-2-1' Type 6 S-P-S PARALLEL MANIPULATOR USING SPHERE INTERSECTS WITH A PROTOTYPE MODEL

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ABSTRACT

The forward solution of a six degree of freedom parallel manipulator is presented using sphere intersects that to the authors knowledge differs to the limited literature reported on the manipulator. The manipulator is a 6 SPS mechanism known as the 3-2-1 manipulator. Due to the property of having solvable forward kinematics the manipulator could be further studied or developed as a haptic device using the proposed method. Modelling of the manipulator and the numerical algorithm to the forward kinematics is presented in this paper and a test mechanism is presented to test model.

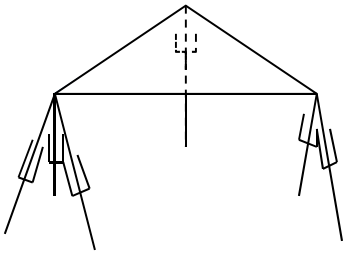

Figure 1. 3-2-1 Manipulator

R Howell, Forward kinematics of a '3-2-1' type 6 S-P-S parallel manipulator using sphere intersects with a prototype model**,** *Proc. 11th School Conf. for Annual Research Projects*, V F Ruiz (Ed), pp. 383–386, University of Reading, 29 May 2012.

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