Abstract
This work is devoted to the forward kinematics of a three-degree-of-freedom parallel manipulator whose moving platform can undergo only spherical motions. The forward position analysis, a challenging task for most parallel manipulators, is presented in closed-form solution. Afterwards, the forward velocity analysis is approached by means of the theory of screws being of special utility the Klein form of the Lie algebra e(3). Finally, a geometric interpretation of the so-called local singularities of the proposed parallel manipulator is provided.

Keywords
Spherical motion, parallel manipulator, screw theory, singularity, kinematics.