
Matrix method of conversion from geocentric rectangular to geodetic ellipsoidal coordinates

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A new close-form method to transform from geocentric rectangular to geodetic ellipsoidal coordinates is presented. It is based on the solution of a pair of quadratic form matrix equations with respect to the coordinates of the point projected onto the ellipsoid along the normal.

Keywords: Cartesian and geodetic coordinates, rotational ellipsoid, coordinate transformation, matrix equations, quadratic form.

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