

# Combination of Mixed Adjustment Model and Geodetic Lines Method to Transform GPS Coordinates into National Coordinates

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## ABSTRACT

The paper describes a simplified transformation between geographical coordinates of two ellipsoidal surfaces (i.e. WGS84 and Clarke 1880), applied in the North of Algeria to express the new GPS coordinates into local coordinates, useful only in small regions and suited for large scale applications such as cadastre. This transformation approach (A. Leick, 90) is based on the mixed adjustment model to estimate the four parameters transformation (2 translations, 1 rotation and scale factor) and on the geodetic lines concept, respectively the called « Inverse » and « Forward » problem of geodesy.

In this context, the program developed was based on methods described above. The necessary data, the steps of processing and the results obtained were discussed.

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TS5.8 Problem Related to Use of GPS

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