



## **Two cylindrical of the type equiareal and conformal map projections of the reference ellipsoid for the local applications**

**A. Safari, A. Ardalan**

Department of Surveying and Geomatics Engineering, University of Tehran (ardalan@ut.ac.ir)

Two new cylindrical map projection of the reference ellipsoid has been developed. Cylindrical map projection 1 possesses the property of preserving the areas of ellipsoidal surfaces. In other words, it is an “equiareal cylindrical map projection” of the reference ellipsoid. The origin of this map projection system can be placed at any point on the surface of the reference ellipsoid and as such the map projection could be ideal for localized application, where the minimum distortion is required. This map projection system is ideal for the implementation in Land Information System and/or Cadastre, where the area of the land has to be preserved on the mapping surface. Cylindrical map projection 2 is conformal but like the map projection 1 is having the property of being generated at any point of interest at the surface of reference ellipsoid. The latter property, which is common in both map projection systems, makes it possible that the center of the map projection system be placed at the middle of geographical area of interest to minimize the distortion at that specific area. Besides since the map projection systems have been developed for the reference ellipsoid it is possible to directly transfer the GPS coordinates into the mapping surface, which adds to the practical application of the two map projections systems.