A Study on the Change Detect of the Earth Volumes by DEM Interpolation

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The concept of creating digital models of the terrain is relatively recent development, and the introduction of the term Digital Terrain Model(DTM) which is simply a statistical representation of the continuous surface of the ground by a large number of selected points with known X, Y, Z co-ordinates in an arbitrary co-ordinate field. There are five main application domains where DTMs are used: civil engineering, earth sciences, planning and resource management, surveying, photogrammetry, and military applications. Especially, Civil engineers are mainly interested in using DTMs for cut-and-fill problems involved with road design, in site planning, and volumetric calculations in building dams, reservoirs and the like.   It may be pertinent to point out that owing to such overt concerns with volume and design, calling a DTM a "terrain model" has more relevance to a civil engineer than other DTM users. An earth volume's calculation from DEM made several methods has been studied. But, we study an earth volume's change detection from methods of interpolation. The three main methods which can be used to acquire the DEM are ground survey methods using total or semi-total stations, photogrammetric methods based on the use of stereoplotting machines and graphics digitizing methods by which the contours. Interpolation is the process of predicting elevations at unsampled sites from measurements made at point locations within the same area or region. Interpolation is necessary when the discrete surface has a different level of resolution, cell size or orientation from that requited, a continuous surface is represented by data model that is different from required and the data does not cover the domain of interest completely. The aim of this paper is the earth volume of change detection calculated by DEM that is interpolated by nearest neighbor, bicubic, bilinear.