سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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سامية محمد مصطفى

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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بعض الوثائق الأصلية تالفة

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بالرسالة صفحات لم ترد بالأصل

ACCURACY INVESTIGATIONS OF DIGITAL TERRAIN MODELS (DTMS) CREATED FROM DIFFERENT DATA SOURCES

A Thesis

Submitted To The Department
Of Surveying Engineering
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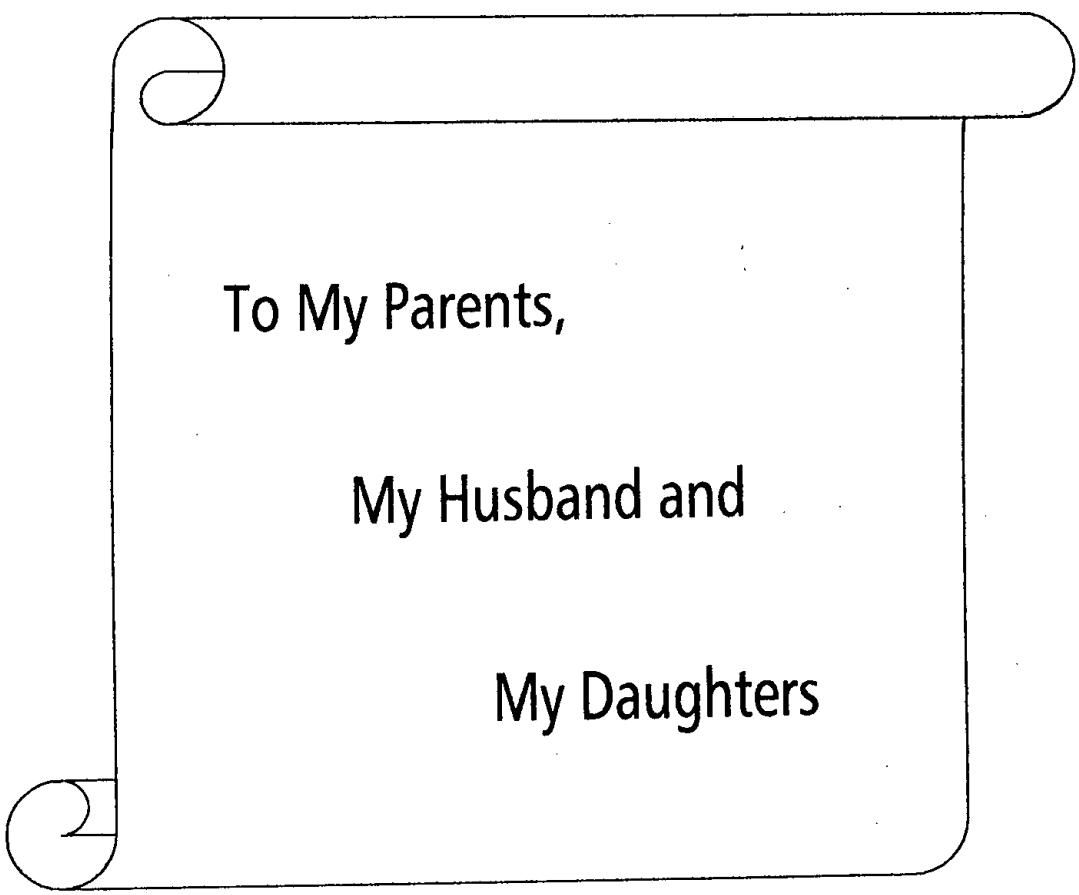
To My Parents,
My Husband and
My Daughters

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Abstract

Surface modeling is a general term, which is used to describe the process of representing a physical or artificially created surface by means of a mathematical expression. Terrain modeling is one particular category of surface modeling which deals with the specific problems of representing the surface of the earth.

The Digital Terrain Model (DTM) is simply a statistical representation of the continuous surface of the ground by a large number of selected points with known X, Y, Z coordinates in an arbitrary coordinate field system.

In this context, a grid-based digital terrain models were derived from both digitized contour lines and digital image matching techniques. The first was obtained by interpolating with a high quality algorithm scanned and vectored contours of existing topographic sheets. The second was extracted from scanned aerial photographs using a soft copy Photogrammertic system (Helava).

By comparing each DTM with a third terrain model generated from traditional ground surveying technique, as three different data sources. Then investigate the accuracy of each DTM generated from each data source.

The obtained results showed that, the DTM generated from the ground surveying data is the best one, followed by that generated from Photogrammertic data, finally, the DTM generated from the contour maps is coming at the end.

i.e., we can say that the best DTM data source is the ground surveying data, then Photogrammertic data, finally the existing topographic maps data, as arranged in an descending order according to the achievable accuracy. The worst results are coming from the existing topographic maps data source. This is due to the production method of this maps. The created contour maps are depending on forming a model coincides with the surface of the earth and tracing this model, existing any distortion in forming this model for any reasons, causes to defect in producing the contour maps, and the created DTM from this maps.