Abstract Volume

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Theme:

Maponomics

Economic Growth Through Geo-Information Technology

TECHNICAL SESSION
Space Program and Remote Sensing

Estimating Wheat Planted Area in Khorasan Razavi Province by Terra Satellite

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Satellite remote sensing techniques have shown the capability to measure reflection from plant community. Spectral vegetation reflection and vegetation indices produced by satellite sensor have been used extensively identification plant cover, and area planted estimating, health community. The TERRA satellite (launched in December 1999), with 5 sensors, provides an opportunity to observe land, atmosphere and ocean. The Moderate Resolution Imaging Spectroradiometer (MODIS) is on –board TERRA satellite. This sensor with 36 bands by 250m, 500m, and 1000m help us to study our environment. The MODIS vegetation indices will be used to monitor photosynthetic activity radiation, change detection, area planted estimating and health community. This study reports the results of estimating winter wheat planted area by MODIS NDVI images for a 16 days period. The images have been used for winter wheat areas of Khorasan Razavi province (North East of IRAN) during agricultural season of 2004-05. Four different areas were selected for this study. These areas are wheat farm, mountain, park and desert. Then some image processing techniques and statistical analysis were used to analysis this area. We classified the Khorasan Razavi province with these areas. Afterward we produced the wheat planted map and calculating area of wheat farms. Our results showed that we have 18742 ha different between MODIS estimating and Agricultural Organization.

TECHNICAL SESSION
Technology: Trends and Applications

Implementing Dikstra Shortest Route for 3D Indoor Navigation System

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Network analysis such as finding the shortest route is one of the most important tools in GIS. Dijkstra's algorithm has proven its capability in providing two-dimensional (2D) shortest route information. However, there are few attempts to fit the algorithm for three-dimensional (3D) shortest routes. This paper describes the investigation and implements the algorithm for 3D environment like 3D building or indoor situations. We developed the navigation system by using the inexpensive 3D game engine, called 3DState. A live demonstration of the system is part of the paper presentation. The approach could be extended for applications like emergency and rescue operations, building management, and other 3D geoinformation applications.