Mapping Topographic Attributes Using Remote Sensing Derived Elevations. (A08-mercuri140632-Poster)

Authors:

- P.A.Mercuri * - *Purdue University*
- B.A.Engel - *Purdue University*
- C.J.Johannsen - *Purdue University*
- D.P.Franzmeier - *Purdue University*

Abstract:

The possibility of generating terrain heights through data from remote sensing sensors has been successfully demonstrated in recent years. Digital elevation models (DEM) have been derived either from the processing of stereo pairs provided by satellite and airborne optical sensors or more recently by means of radar and laser techniques. A broad-area DEM coverage, produced by Interferometric Synthetic Aperture Radar (IFSAR) at high resolution, was acquired over 3000 km2 of low relief areas in Indiana. Agricultural fields with varying terrain expression ranging from flat to gently sloping topography were selected. The vertical accuracy for the different acquisition modes, ranges between 0.28 to 1.47 meters (RMSE). The main objective was to produce a range of topographic attributes to support the prediction of landforms, soil attributes and hydrologic derivatives. Even with a generally flat topography, contour lines, slope, aspect, curvature, as well as local drain direction and flow accumulation derivatives have been produced. Quantitative terrain analysis can also provide spatially distributed measurements of the microrelief within soil delineations.

Corresponding Author Information:

Pablo Mercuri
Purdue University
1150 Lilly Hall - Agronomy
West Lafayette, IN 47907-1150

phone: 765-494-0796
fax: 765-496-2926
e-mail: mercuri@purdue.edu

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 229

Keywords:
Topography, Precision Farming, DEM, Terrain Attributes