Abstract

Sky Viewshed Modeling for GPS Use in the Urban Environment
Track: Modeling
Author(s): Bridget Beesley

In an urban environment, the occlusion of satellite broadcasts varies across space and thus, preplanning for collection of GPS points requires consideration of these obstructions. This paper presents a GIS embedded model (ArcGIS and ArcObjects) for predicting GPS error via modeling PDOP in an urban environment. The "skyview" model predicted PDOP for spatial locations as a function of the percentage of the sky visible to the viewer. The terrain was modeled with a combination of airborne LIDAR mass points and building footprints. The observed GPS constellation was compared to modeled "skyview" for spatial locations across the University of South Carolina campus.

Bridget Beesley
SC Department of Commerce
IT/GIS
1201 Main Street, Suite 1500
Columbia, SC 29201-3200
USA
Phone: (803) 737-2340
Fax: (803) 806-3452
E-mail: bbeesley@commerce.state.sc.us