演講公告

時間: **2008/12/05 (五) 早上 9:00~10:30AM**
地點: **中央大學工程一館 E-135** (自由入席, All are welcome)
主辦單位: 數據分析方法研究中心, 生物醫學工程研究所 (03-4227151 ext34951)

Urban Terrain Point Cloud Data Modeling with Adaptive Dual Marching Tetrahedra

by
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Abstract. We describe some work in progress on a project focused on the mathematical and geometric modeling of scanner data (e.g. LIDAR) which has been obtained from urban terrains. The methods that are being developed are based upon the concepts of adaptively refined implicit models. There are special and particular advantages to using implicit models for this type of geometry including the ease of performing Boolean operations (union and intersection) and creating multiresolution models. The field functions for the implicit models are selected on the basis of efficient compact models that can replicate complicated geometry and also faithfully reproduce sharp detailed features and artifacts. In addition some new, novel improved methods for estimating normal vectors are described which improve the quality and efficiency of the adaptive fitting process. The requestor and funding agency of this research is the United States of America Army through the US Army Research Office.

Gregory M. Nielson is a professor of the Mathematics Department and the Computer Science Department at Arizona State University where he teaches and does research in the areas of Scientific Visualization and Geometric Modeling. He has lectured and published widely on the topic of multivariate data modeling and visualization. Prof. Nielson is a cofounder of the IEEE journal *Transactions on Visualization and Computer Graphics* and he has been on the editorial boards of several prestigious journals including ACM Transactions on Graphics, Computer Graphics & Applications and Computer Aided Geometric Design. He is one of the founders and members of the steering committee of the IEEE sponsored conference series on Visualization. He has previously chaired and is currently a director of the IEEE Computer Society Technical Committee on Computer Graphics. He is the recipient of an IEEE Meritorious Service Award, an IEEE Outstanding Contribution Award and the John Gregory Memorial Award in Geometric Modeling