عنوان فارسی مقاله:
استخراج اتوماتیک اطلاعات تراکم ساختمان های شهری با استفاده از داده های لیدار و متد اشیا مبنا

عنوان انگلیسی مقاله:
Automated derivation of urban building density information using airborne LiDAR data and object-based method

توجه!
این فایل تنها قسمتی از ترجمه میباشد. برای تهیه مقاله ترجمه شده کامل با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک کنید.
5. Conclusions

The scientific knowledge of urban building density information is fundamentally important for intelligent management and planning of the urban environment. The airborne LiDAR technology provides the extraordinary capability in gathering highly accurate and densely sampled surface elevation measurements over urban areas. Through a case study in downtown Houston, we have demonstrated that unprecedented detail level of accurate building density information can be automatically and efficiently derived from airborne LiDAR data. We developed an effective object-based method and software tool that is capable of extracting building objects and computing various building density indicators at three different scales. First, a set of geometric and volumetric attributes are computed at individual building scale to describe the size and shape of buildings. Second, by associating with land lots through topological operation, two most widely used building density indicator, BCR and FAR, are computed and mapped at land lot scale. Third, a suite of density attributes are computed at urban district scale to provide quantitative description of the 3D spatial structure of urban landscape. The object-based methods and associated algorithms have been implemented as an ArcGIS extension module with a graphical users interface. We believe this software tool would be useful for the urban planning and management community to characterize and quantify urban building density based on the newly available LiDAR data.