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The evaluation of urban impervious surface changes in coastal areas using satellite remote sensing imagesYuanzhi Zhang¹, Qing Yu² and Yu Li³¹Chinese Academy of Sciences, China²Geomatics Center of Zhejiang, China³Beijing University of Technology, China

In this study we present the evaluation of urban impervious surface changes in coastal areas using remote sensing images. As an important manifestation of urbanization is the rise of impervious surface coverage, the urban internal distribution of impervious surface is a key indicator of evaluating the urban ecological environment. Therefore, the impervious surface estimation becomes increasingly important in aspects of evaluating the influence of urbanization on the environment. Meanwhile, the rapid development of satellite remote sensing technology provides a potential opportunity for characterizing and quantifying the distribution of urban impervious surface in coastal areas in cost-effective ways, especially for the large scale regions. In the study, urban impervious surfaces of coastal areas are extracted using the methods of combined use of V-I-S (vegetation-impervious-soil) model and LSMA (linear spectral mixture analysis) from the satellite images to evaluate the urban impervious surface changes of coastal areas in the study area of Shenzhen, China, from 2004 to 2014. The results show that the distribution of urban impervious surfaces was greatly increased in coastal areas of Shenzhen in recent 10 years. The ratio of urban impervious surface in Shenzhen is relatively high if compared with that of Hong Kong, which should be paid attention in the urban planning of the future.

Biography

Yuanzhi Zhang has his expertise in evaluation and passion in improving the remote estimation of urban impervious surfaces in coastal regions. His evaluation model based on combined use of spectral analysis and SAR information creates new pathways for improving the accuracy of impervious surfaces.

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