Research on Remote Sensing recognition features of Yuan Yang Terraces in Yunnan Province (China)

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Yuan Yang terraces is one of the most famous terraces in China, and it was successfully listed in the world heritage list at the 37th world heritage convention. On the one hand, Yuan Yang terraces retain more soil and water, to reduce both hydrological connectivity and erosion, and to support irrigation. On the other hand, It has the important tourism value, bring the huge revenue to local residents. In order to protect and make use of Yuan Yang terraces better, This study analyzed the spatial distribution and spectral characteristics of terraces:(1) Through visual interpretation, the study recognized the terraces based on the spatial adjusted remote sensing image (2010 Geoeye-1 with resolution of 1m/pix), and extracted topographic feature (elevation, slope, aspect, etc.) based on the digital elevation model with resolution of 20m/pix. The terraces cover a total area of about 11.58Km2, accounted for 24.4% of the whole study area. The terraces appear at range from 1400m to 1800m in elevation, 10° to 20° in slope, northwest to northeast in aspect; (2) Using the method of weight of evidence, this study assessed the importance of different topographic feature. The results show that the sort of importance: elevation>slope>aspect; (3) The study counted the Normalized Difference Vegetation Index (NDVI) changes of terraces throughout the year, based on the landsat-5 image with resolution of 30m/pix. The results show that the changes of terraces' NDVI are bigger than other stuff (e.g. forest, road, house, etc.). Those work made a good preparations for establishing the dynamic remote sensing monitoring system of Yuan Yang terraces.