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Automatic recognizing rice field and economic plantation field with FORMOSAT-2 imagery

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The imageries obtained from the existing commercial high resolution satellite such as IKONOS and Quick Bird were resample to match with the 2 meters ground resolution of the FormoSAT-2 images. In the past, the lower resolution satellite images, like SPOT, were mostly used in Taiwan for the economic plantation identification purpose and the FormoSAT-2 images bearing higher resolution that will take over the usage in the future. For this reason, the differences in the image recognition accuracy and the feasibility of using FormoSAT-2 images to classify surface features are the mostly wondered. Spectrum ratio, image textures and time serial images are the major information used to calculate the spatial distribution in this work. Because the FormoSAT-2 images could be received on daily bases and the spectrum of the rice and economic plantation field would vary with time, thus the reason when time serial information added into the handling processes, the improvement of accuracy to the recognition has been achieved.

The processes calculated by the maximum likelihood method shown that only two or three factors within vast information could obtain the satisfied accuracy level from both the IKONOS and Quick Bird images. Besides that, the same procedures applied to the FormoSAT-2 images also shown the correct tendency of spatial distribution for the rice and economic plantation field.