

# The Techniques of Deriving Information from SPOT Images and Study on Thematic Mapping

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As the composition of China-Germany cooperation project "Land use and Sustainable Development (SILUP)", Jiangning county of Nanjing, situated in the middle part of Nanjing city and southern band of Yangtze River with the geographic location of 31°30'-32°00'N and 118°30'-119°25' E, was selected as a test area. The SPOT-2 and SPOT-4 remotely sensed images were used for deriving such thematic information as water bodies, roads and settlements and their thematic mapping. In this paper, some comprehensive methods and techniques of extracting the information from SPOT data were described and probed, specially a improved method of land use/land cover classification by using SPOT images and ancillary data. In the land use/land cover classification, the feature sets containing the SPOT original band, ratios, normalized differential index, and a digital elevation model were tested using unsupervised ISODATA clustering. Incorporation of elevation data was found to be able to improve land cover discrimination. Further improvement in the classification accuracy was obtained when using elevation data under a supervised technique. The study also put forward techniques of screen display editing to get the thematic maps. Some thematic maps were generated and their accuracy was assessed and discussed. The results showed that the more fine thematic information can be derived from SPOT images by using the methods and techniques introduced in this paper, some extracted information can be used for drawing thematic maps in a scale of 1:50000. The dynamic change information of land use/land cover can be obtained effectively based on the special overlay of the GIS by using multi-temporal remote sensing data.

**Key words** SPOT images, information extraction, thematic mapping, dynamic analysis