

Geological Applications of AIRSAR/TOPSAR Data in the Tubau Area, Bintulu, Sarawak

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During the early period of geological investigation, aerial photographs were the only source of remotely sensed data for analyzing geological features. With the advance of technology in remote sensing, radar images are available and readily provides a helpful tool to analyze geological features. Geological interpretation of AIRSAR/TOPSAR images identification revealed numerous interesting findings, both in the local and regional scales. The images were then used to extract lithologic information, structural interpretation and digital terrain models. There are three lithological units that can be identified from these images based on their morphological and textural appearances, namely: riverine alluvium, Neogene Peripheral Basin and Folded Rajang Group. Several major faults were also identified, namely: the Bukit Mersing Line, the Tubau Fault, the Kalo Fault and another four newly named faults; the Merirai Fault, Hulu Merirai-Unan Fault, Kupa Fault and Tingang Fault. The imagery can enhance the topographic features, which are controlled by geological elements. The colour composites using 3 multi-polarization bands have improved the visual interpretability of land covered features compared to the single SAR data. With the correct choice of bands, the information extracted could be maximized.
