

## **UPDATING GEOLOGICAL MAPS IN CHINA USING RADARSAT**

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This paper discusses the uses of RADARSAT images to revise regional geological maps in China. The area chosen for this pilot study is the rugged Lengkou area of east Hebei Province. Regional geological maps exist at 1:200000, and in some smaller area maps exist at a scale of 1:50 000. Our aim was to interpret the stereo RADARSAT data; to combine the geological information at the two scales with the SAR images; and to establish the guidelines for the use of RADARSAT images for regional geological map revision. The Lengkou area is within the eastern part of the Yanshan fold belt of the north China platform. Fe, Au, Cu, Pb-Zn polymetal ores are the main mineral resources in the area. The Au ore deposits are associated with fractured Archean greenstone belts and hydrothermal quartz veins. Since the terrain is very rugged, we used a RADARSAT stereo pair, which consisted of an S2, (24-31degrees) and S7 (45-47 degrees). The stereo images assisted us to identify several NW- SE, and NE-SW fracture systems, and to delineate the granitic, gneissic, carbonate and alluvial terrains from the SAR textures. Our results show that in these rugged terrains, the SAR stereo pairs were more useful for structural and lithological mapping than a single RADARSAT image. The process of overlaying the RADARSAT data with existing geological maps is difficult because of the lack of accurate DTM in these rugged areas.