

SAR IMAGERY GEOLOGICAL APPLICATIONS IN LAGO FAGNANO REGION, TIERRA DEL FUEGO, ARGENTINA

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Within the framework of the National Program of Geological and Thematic Map and Globesar II, the Lago Fagnano region was chosen to analyze the capabilities of radar imagery in order to enhance the geological interpretation in rough and cloudy regions with forest coverage. The morphological characteristics are described as well as the geological framework. The methodology applied was merging and analyzing optical and radar satellite imagery. It was used Radarsat Beam 7 and Beam 5 descending imagery and Landsat TM 226/098 image. Image processing steps are described and the main results from interpretation are pointed. The most important result was from the SAR images with inverted histogram, which was helpful for a better interpretation of the geological features, in this cloudy region without basic cartography. The southern part of the image has two E-W striking main faults, Valle Carabajal and Lago Fagnano, as important linear features. The last one has historical surface rupture. They bound mountain blocks which has a transverse fracturing, short lineaments striking obliquely and perpendicular to the main faults. In the western side, the image shows a clear bedding pattern. Radar signal shows clearly their structural attitude and helps mapping these different rocks with sharp contacts. The north region shows dry areas and wetlands associated to a dendritic drainage pattern. Airborne geophysical data interpretation is included in this work.