

Ceramah Teknik (Technical Talk)

The use of microwave remote sensing in geology

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Abstrak (Abstract)

During the late 1960s and the first half of the 1970s, large parts of the world were covered by airborne side-looking radar surveys. Most of these surveys were carried out over Third World countries where the complete lack of any type of map severely hampered development progress. The "Radar" project in Brazil is the best known example and the largest in areal extent (4.5 million km²). The survey was later expanded to cover the entire Brazilian territory of 8.5 million km². With other radar surveys over the Colombian, Ecuadorian, Peruvian and Bolivian Amazon areas, the largest cartographic blank in the world (the South American Amazon area) was coloured in-thanks to the fast method of data acquisition (independent of weather conditions) and the synoptic view provided by radar mosaics, which permit relatively rapid reconnaissance surveying.

With the launch of Seasat in 1978, spaceborne imaging radar for earth observation "came into its own".

The nineties is the decennium of satellite radar surveying. With the launch of the ERS-1 of the European Space Agency (ESA), in July of 1991, the remote sensing community in Europe is gearing up to full use of side looking radar data for earth observation.

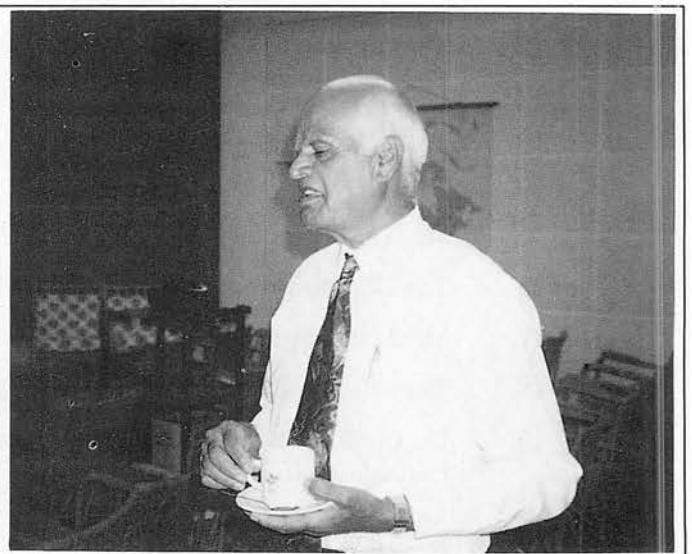
Even before the ERS-1 there was the launch of the Soviet LAMAZ radar satellite in March of 1991.

The Japanese ERS-1 was launched on 11 February 1992. The deployment of JERS-1 by the National Space Development Agency of Japan (NASDA) was not without some difficulty. The deployment of the SAR antenna was delayed, and the check-out schedule of the payload was revised. Everything eventually functioned perfectly.

The geological community has always been a prime user of remote sensing data for application surveys. Oil and mining companies have shown a great interest in the use of airborne radar data for their exploration programs and large areas have been contractually flown with radar for them, particularly in the humid tropical belt. The availability of satellite radar data in future and the possibility of digital combining these microwave data with satellite data obtained in the visible and near infrared part of the spectrum will form an attractive option for exploration surveys.



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