

Geomorphological and archaeological investigations in the Euphrate Plain in Syria: comparison between SAR and optical data (poster session)
Ozer André* and Closson Damien*

*Laboratoire de Géomorphologie et Télédétection, Université de Liège, Avenue du 6 Août, 2, B-4000 LIEGE.

Phone: +32 4 366 53 35

Fax: +32 4 366 57 22

E-mail: andre.ozer@physun.geo.ulg.ac.be

Abstract

The use of remote sensing in archaeological prospecting is rarely mentioned in the literature. Yet, in countries where cartographic coverage is antiquated or inaccurate and aerial photographs are unavailable, satellite images allows the generalisation of field observation.

In this research, two issues are addressed: how can remote sensing improve the knowledge of the palaeogeography and what sort of images are most useful for archaeological prospecting.

We have utilised two sensors' data: SPOT radiometer (HRV) and ERS1 AMI SAR.

The study was designed to measure remote sensing supplies in dissimilar contexts : textural image processing (co-occurrence matrix), G.I.S. method (superposition), geomorphologic cartography (ancient river meandering, ancient terraces, natural levees,caves), dynamic geomorphology (actual river meandering) and archaeological prospecting.

Some field recognised features have been mapped. For instance, in relation with soil texture and surface roughness, an ancient irrigation or ship canal of Early Bronze Age is visible on SAR and SPOT images. Moreover correlation between ancient natural levees and present irrigation network and river crosscutting in *Jebel Tell Masaikh* (Ozer, 1996) are also observable.

The superposition in a G.I.S. with thematic maps supplies us with a complement of information's (length of ancient canal) which gives us the possibility to predict flows.

The present study demonstrates the great value of " visible " images in comparison with SAR data. These one would produce more interesting information's combining multitemporal images, multifrequency images and variable incidence angle.

Keywords:

SAR, SPOT, geomorphologic mapping, dynamic geomorphology, archaeological prospecting, Early Bronze.