

**Author :**

**Dr.. Mohamed Ibrahim Khattab <sup>1</sup>**  
**Dr.. Amr Mohamed Sabry Mahsoub <sup>(2)</sup>**

**Hydrogeomorphological analysis of  
the wadi Alam basin and its impacts  
on flash floods**

**"Using remote sensing and geographic  
information systems"**

**ABSTRACT**

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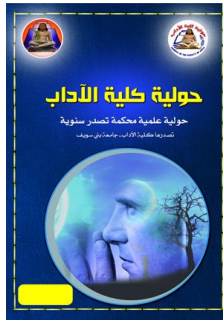
Wadi Alam is one of the most important drainage basins in the Eastern Desert of Egypt. By the last four decades, flash floods frequently hit Wadi Alam and they caused large damage. Wadi Alam consists of nine subbasins, with trunk streams of 5th to 8th order. A large area of Marsa Alam city including buildings, utilities and roads occupy the lower part of Wadi Alam as well as the Sukkari gold mine located inside the Sukari sub-basin.

The current study focuses on geological and terrain characteristics of the basin, Moreover morphometric and hydrological characteristics of the drainage sub-basins and their correlations with flash floods occurrence. In the term of flash flood hazard, the studied sub-basins are classified in three categories. GIS and remote sensing methods utilized to identify hazardous

land uses such as Marsa Alam built-up area and solar power plant at the

<sup>1</sup>) Lecturer of Physical Geography, Faculty of Arts, Cairo University.

<sup>2</sup>) Lecturer of Physical Geography, Faculty of Arts, Ain Shams University



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bottom of Wadi Alam. The current study reassesses the existing and proposed protective engineering measures in the study area, and it recommends constructing; three artificial canals which extends on certain part of the trunk stream of Wadi Alam and new dam on the outlet of Umm Kharijah sub-basin.