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Assessment of Flood Hazard of Jeddah Area 2009, Saudi Arabia

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ABSTRACT
Due climatic variability and anthropogenic changes, floods have been raised lately in several regions worldwide. The resulting impact from floods is often harmful. This can be applied to Saudi Arabia, the country which is known by dry climatic conditions, and it became lately a typical region for such natural hazard. Hence, floods are observed as a yearly disaster with high magnitude of influence. Jeddah, a coastal Saudi city on the Red Sea to the west, has witnessed severe event in November 2009, when flooded water and sediments (torrents) invaded the urban areas and resulted decease of many people and destroyed the infrastructure and civilized zones. The lack of mitigation implements exacerbated the problem. This study implies an assessment of flood hazard risk in Jeddah region. It aims to identify the zones subjected to flood and then inducing the influencing factors at different levels of effect. For this purpose space techniques were utilized, with a focus on IKONOS satellite images, which are characterized by high resolution in identifying terrain features. In addition Geographic Information System (GIS) was also used to support space techniques. Thus, damaged areas and the mechanism of flooding process were recognized. This helps avoiding further urban expansion in areas under flood risk and will aid decision maker to put new strategies for hazard management.

KEYWORDS
Disaster, Flooded Areas, Space Tools, Saudi Arabia

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