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Applications of Remote Sensing to detecting Active and Fresh Faulting Zones. Case Study: AL-Ghab Graben Complex, Northwest of Syria

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- 1 Northwest of Syria is part of one of the very active deformation belt on the Earth today. This area and the western part of Syria are located along the great rift system (Left-Lateral or African- Syrian Rift System). Those areas are tectonically active and caused a lot of seismically events. The AL-Ghab Graben complex is situated within this wide area of Cenozoic deformation. The system formed, initially, as a result of the break up of the Arabian plate from the African plate since the mid-Cenozoic. The Arabian plate is moving in a NNW direction, whereas the African plate is moving to the North. The left-lateral motion along the Dead Sea Fault Zone accommodates the difference in movement rate between both plates. Some 80 km to the North of AL-Ghab Graben both plates move into the Anatolian plate, which causes the latter to move to the West.**

- 2 The analysis of TM Space Imagery and digital image processing of spectral data show that the lineaments along AL-Ghab Graben may be considered as linear Conjunctions accompanied with complex fracturing system. This complex is affected by distance stresses accompanied with intensive forces. This action indicates that these sites are active and in a continual movement. In addition to that, the statistic analysis of Thematic Mapper data and the features from a digital elevation model (DEM) produced from SAR interferometry show the existence of spectral structures at the same sites.**