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Hydrogeological perturbations along the Dead Sea coast revealed by submarine sinkholes, Lisan and Ghor al Haditha, Jordan

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For several decades, surface water and groundwater located in the closed Dead Sea basin experience excessive exploitation. In fifty years, the level of the terminal lake has fallen by about 30 meters and its surface shrunk by one third.
The coastal zone is the one that best shows the stigma of the general environmental degradation. Among these are the sinkholes, landslides and subsidence.
For years, these phenomena are relatively well documented, particularly sinkholes and subsidence. Over the past five years, field observations combined with ground deformations measurements by radar interferometric stacking techniques have shown that the intensity (size, frequency) of the collapses is increasing in the most affected part of the southern Dead Sea area. The zones of the dried up Lynch Strait, the Lisan peninsula and Ghor Al Haditha in Jordan seem the most affected.
Very high resolution (0.5 to 2 m) GeoEye satellite images have shown that many sinkholes also formed below the level of the Dead Sea. The water transparency allows observations up to several meters deep.
These data contribute to the validation of the models developed in connection with the deformation of the fresh/saline water interface due to an imbalance always more pronounced between the levels of the surrounding groundwaters and of the terminal lake.