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A 300m-width sinkhole threatens the stability of the embankment of a saltpan in Jordan, Dead Sea Region

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Since the 1980s, the Dead Sea coastal zone is affected by sinkholes. The dynamic of the salt karst system is attested by a drastic increase of collapse events. The energy available for sub-surface erosion (or cavities genesis) is related to the head difference between the water table and the lake level which drop down at an accelerating rate of more than 1 m/yr.
In the region of Ghor Al Haditha, Jordan, the size of the craters increased significantly during the last decade. Up to now, the greatest compound structure observed (association of metric subsidence, decametric sinkholes, and landslides) was about 150-200 m in diameter.
End of December 2012, a single circular structure having 250-300 m in diameter was identified within a 10 km x 1.5 km saltpan of the Arab Potash Company. This finding raises questions regarding the origin of the underlying cavity and the capability of prediction of all models developed up to now in Israel and Jordan regarding the Dead Sea sinkholes.
The analysis of satellite images of the past shows that the appearance of this unique depression is very recent (probably less than 5 years).
Cosmo-SkyMed radar images have been processed to map the associated deformation field. Ground motions attest that the overall diameter could be around 600 m.
Currently, this sinkhole is threatening the stability of more than one kilometer of a 12 km long dike holding 90 million m3 of Dead Sea brine.
This case study underlines the great fragility of the Dead Sea salt karst and demonstrates the need for the setting up of an early warning system.