

## **Monitoring of coastal erosion/progradation phenomena via ground penetrating radar (GPR)**

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Ground penetrating radar (GPR) systems have traditionally been used to image subsurface objects. In the last decades GPR, as a high-resolution geophysical technique, has increasingly been employed to produce images of major erosional and depositional surfaces.

The work aims to evaluate the effectiveness of applying EM techniques for monitoring and controlling coastal erosion/progradation. Such an issue assumes great interest with respect to the coastal and beach management and protection. GPR measurements were taken along a Ionian sandy coast and artificial reflectors were employed and displaced along some transects, buried in the subsoil and, eventually, joined together by means of a cable system. The activity deals with the obtainment of accurate profiles representing the data base for performing/developing/updating some issues related to “coastal management plan” in a wider framework of risk assessment. Further, the activities are addressed to the evaluation of beach thickness in terms of accretion and/or reduction as well as changes in the mean slope of the emerged and submerged beach. More over, laboratory activities have been carried on in order to perform some specific calibrator tests. A tank containing a sandy soil (LxBxH 10x4x2 mt) has been properly designed and built to allow the tuning of the activities related to response of the reflectors in an environmental-controlled conditions. Some preliminary results are presented and discussed.