

## **LANDSLIDE INSTABILITY AT THE ST. GIORGIO FORTRESS (CAPRAIA ISLAND, TUSCANY. ITALY)**

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The St. Giorgio Fortress is located on Capraia, a volcanic island included in the Tuscany Archipelago National Park. It dates back to the 1300's and reached its maximum importance between the XVth and the XVIIth century, when the island was an important Genoese military base. The fortress was built on an andesitic exogenous dome, rising above the sea and has had stability problems since ancient times. In particular, in 1766 some of its defensive structures collapsed and in 1853 a large landslide destroyed a wing of the fortress, with several houses and a small church. Failures are still occurring at present. A research program in several phases was carried out: historic cartography was used to define both the morphologic characteristics of the cliff before 1853 and the evolution of the fortress since its origin; specific geologic and geomorphologic investigations were carried out and thematic charts of the area drawn up; a geomechanic investigation aimed at assessing the present state of activity and identifying the sectors where future failures are more likely to occur; discontinuity families of the cliff and their specific characteristics have been identified to evaluate the current instability processes and, where necessary, carry out stability analyses. Following this study a very high risk condition has been identified for the stability of both the fortress itself and the section of coast beneath the falesia, intensely exploited during the summer by tourists and vacationers.