



## **Landslide-induced damage to an 80 m long road bridge with pile foundation: A case of study in Alcoy (SE, Spain)**

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Landslides can affect road infrastructures such as bridges, causing damages to its structures and, in some severe cases, the collapse of the whole or a part of the structure. In this work, a landslide-induced damage to a road bridge is presented. This bridge, which provides access to an industrial area in Alcoy (Spain), was built using precast beams placed on supporting piers and an in-situ reinforced concrete deck slab. It is 80 m long and has 4 intermediate piers supported by a pile foundation. Approximately, seven years after its inauguration this infrastructure was affected by the reactivation of a landslide that caused major damage to the bridge until rendering it unusable. The slope area is affected by an old large landslide involving a layer of colluvial deposits. These Quaternary coarse-grained deposits (gravels in silty/sandy matrix) lie on Tertiary hard marls exhibiting low to medium plasticity with some intercalated calcareous layers. In this work, a damage description and a crack mapping of the structure and the ground surface in the nearby area of the bridge was performed on field with the support of an Unmanned Aerial Vehicle. The jointly analysis of this information and other in situ available data have allowed to better understand the affection suffered by the bridge as well as the involved landsliding processes.