



An overhang obsequent slope landslide due to bearing failure on coastal area in northern Taiwan

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Rockfall failure and toppling failure are usually considered as the typical type of obsequent slopes failure. Under some appropriate condition, however, we find a case on coastal area in northern Taiwan showing that bearing failure also could be found in obsequent slopes which are composed of sandstone and shale layers. In this case, a 20m-thickness sandstone layer is covered on a 15m-thickness shale layer and the sandstone layer formed an overhang part due to differential erosion. Before this overhang part falling down or toppling, the sandstone block might cause a bearing failure in shale layer due to the lower strength of shale, and remain a sandstone block at the toe of landslide. In conventional topography map, it is difficult to identify an overhang part on cliffs. In order to improve this problem, the first part in this research is developing a method to describe overhang topography and analysis the size of overhang part more precisely. We develop a method which set the normal vector direction of cliff as the Z axle of contours through cloud points produced by UAV photogrammetry. The second part is to perform a small scale physical model to simulate bearing failure mechanism of the obsequent slope.