Abstract

Recent developments in remote sensing techniques provide powerful tools for geomorphological studies. The geometric and kinematic characterization of landslides is a key factor in understanding the mechanisms of movement. The purpose of this publication is to show the potential of digital photogrammetry in the spatiotemporal study of landslides in urban areas. The case study focuses on the landslide of El Biar in Algiers. Comparison of digital elevation models generated following an established methodology shows the morphological evolution of the site. Orthophotos are used to measure surface displacements. The analysis of horizontal displacements between 1995 and 2007 shows that the landslide of El Biar can be divided into two zones: a peripheral zone moving at an average speed of about 5. cm per year and a central zone moving at an average speed of about 10. cm per year. Comparing the results with those obtained by traditional survey methods shows a remarkable consistency, thus validating the techniques used. This study demonstrates that digital photogrammetry, when combined with geological and geotechnical data, can improve the characterization and understanding of landslide mechanisms, and thus help defining mitigation solutions