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On the use of Multisensor and multitemporal data for monitoring risk degradation and looting in archaeological site

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Illegal excavations represent one of the main risks which affect the archaeological heritage all over the world. They cause a massive loss of artefacts but also, and above all, a loss of the cultural context, which makes the subsequent interpretation of archaeological remains very difficult. Remote sensing offers a suitable chance to quantify and analyse this phenomenon, especially in those countries, from Southern America to Middle East, where the surveillance on site is not much effective and time consuming or non practicable due to military or political restrictions.
In this paper we focus on the use of GeoEye and Google Earth imagery to quantitatively assess looting in Ventarron (Lambayeque, Peru) that is one of most important archaeological sites in Southern America. Multitemporal satellite images acquired for the study area have been processed by using both autocorrelation statistics and unsupervised classification to highlight and extract looting patterns. The mapping of areas affected by looting offered the opportunity to investigate such areas not previously systematically documented.

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