

INVESTIGATION OF THE STRAIN VARIATION AT THE ACROPOLIS CIRCUIT WALL

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ABSTRACT

Abstract. The current study aims to assist the preservation of the structural integrity of historical complex sites, utilizing smart instrumental monitoring / remote sensing. The main idea is that smart instrumental monitoring can provide important real-time information (records) of both the actual natural hazard(s) and the corresponding vulnerability, in terms of structural response and distress of structures and monuments of historically complex sites. The study focuses on the Acropolis Circuit Wall, where strain recordings via Smart Rod optical fibre sensors have been made possible. More specifically, wavelength recordings have been obtained and then converted into strain recordings, while the temperature influence has been taken into consideration. Furthermore, reference measurements have been defined during the initial system operation and then they are used for deduction of subsequent recordings. Strains recorded 2 and 1/2 years after the initial system installation are shown, after the deduction of the reference measurements. Finally, strain variation between sensors located at the inner and outer side of the same optical fibre Smart Rod are shown.

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