



The use of portable Non-Destructive Techniques for material decay characterisation of palaeontological Geosites

Miguel Gomez-Heras (1), Jose A. Ortega-Becerril (1), Jerónimo López-Martínez (1), Belén Oliva-Urcia (1), Adolfo Maestro (1,2)

(1) Universidad Autónoma de Madrid, Departamento de Geología y Geoquímica, Madrid, Spain
(miguel.gomezheras@uam.es), (2) Instituto Geológico y Minero de España, Madrid, Spain

The conservation of both natural and cultural heritage is regarded as a priority for humankind and it is therefore recognised by the UNESCO since the Convention Concerning the Protection of the World Cultural and Natural Heritage in 1972. The International Union of Geological Sciences launched in 1995 in collaboration with UNESCO the Global Geosites programme to create an inventory of geological heritage sites. Although the conservation of Geosites may face different issues to those of stone-built cultural heritage, much could be learnt from techniques initially used to characterise weathering and material decay in stone-built cultural heritage. This is especially the case for portable Non-Destructive Techniques (NDT). Portable NDT allow characterising on-site the degree of material decay and are, therefore, a good way to assess the state of conservation of certain Geosites whose relevance lies on localised features. Geosites chosen for the outstanding occurrence of dinosaur ichnites, such as those in the Cameros Massif (north-western part of the Iberian Range, Spain), are a good example of this. This communication explores the potential of portable NDT to characterise the state of decay and susceptibility to further decay of dinosaur ichnites in the Cameros Massif. These techniques included: Ultrasound Pulse Velocity determination, Leeb hardness rebound test, colour determination by means of a spectrophotometer and thermal imaging obtained with an infrared camera. Results will show the potential of these techniques to characterise differential weathering patterns in both individual ichnites as well as on tracks in addition to assessing the possible effects of conservation strategies on the long-term preservation of the mentioned Geosites.

Research funded by Madrid's Regional Government project Geomateriales 2 S2013/MIT-2914