

EGU22-12056

<https://doi.org/10.5194/egusphere-egu22-12056>

EGU General Assembly 2022

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New cosmogenic nuclide dating laboratory in CENIEH, Spain

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Centro Nacional de Investigación sobre la Evolución Humana (or National Research Centre on Human Evolution, CENIEH) is located in Burgos, northern Spain. The centre is dedicated to human evolution research worldwide, including Atapuerca, a world heritage archaeological site where the oldest human fossil in Europe to date have been discovered. To support the needs of characterising geological and sedimentological context of archaeological sites, the institute also features a wide range of geological analysis (e.g., Laser diffraction grain size analyser, XRD, XRF, Raman Spectroscopy, SEM, Micro CT, Digital mapping and 3D analysis) and geochronology laboratories (including palaeomagnetism, OSL, ESR and U-series). In 2020, a new cosmogenic nuclide dating research line has initiated to strengthen the existing geochronological capabilities in the centre, particularly, at timescales of early-mid Pleistocene and beyond. To date, we have established a procedure for routine quartz separation and ^{10}Be - ^{26}Al extraction. Current projects include ^{10}Be - ^{26}Al burial/isochron dating of cave deposits, fluvial terraces and artefacts in the context of archaeological and landscape evolution research. In this paper, we present a general setup of the laboratory, its capacity and current projects as well as future prospective.