P.7-1: ESR chronology of the fluvial sequence of Cueva del Silo (Sierra de Atapuerca, Spain)

Hernando-Alonso, I.[1*], Moreno, D.[1], Ortega, A.I.[1,2], Benito-Calvo, A.[1], Alonso, M.J.[1], Carbonell, E.,[3, 4] Bermúdez de Castro, J.M.[1],

[1]Centro Nacional de Investigación sobre la Evolución Humana (CENIEH), Paseo sierra de Atapuerca 3, 09002 Burgos (Spain)

[2] Fundación Atapuerca, Calle Crta. De Logroño 44, 09198 Ibeas de Juarros, Burgos (Spain)

[3] Institut Català de Paleoecologia Humana i Evolució Social (IPHES), Edificio W3, Campus Sescelades URV, Zona Educacional 4, 43007 Tarragona (Spain)

[4] Universitat Rovira i Virgili, Campus Sescelades URV, Zona Educacional 4, 43007 Tarragona (Spain)

*Presenting Author: isabel.hernando@cenieh.es

The Cueva del Silo is part of the lower karst level of the Cueva Mayor-Cueva del Silo karst system together with the Sima de los Huesos and Cueva Peluda (Sierra de Atapuerca, Burgos, Spain). It is a maze of sub-horizontal conduits with a ceiling at an elevation of 985 – 990 m.a.s.l. and characterised by a main passage formed by Sala del Caos-Galería Principal and a secondary network among which the Galería de las Arenas. This cave is remarkable for the presence of fluvial deposits consisting of gravels with clasts of metamorphic rocks in the Sala del Caos-Galería Principal, and sand and silt facies in the Galería de las Arenas that record the entry of the Arlanzón River water in the cave system.

This fluvial input from the Arlanzón River could be correlated to terrace T5 (+50 – 58 m) which has been dated by ESR to 600-700 ka or an older level on the basis of their altitudinal distribution. The chronological framework of these fluvial deposits inside the cave is very scarce. A TL age of 175.4 ± 28.6 ka was obtained by the now closed *Laboratorio de Datación y Radioquímica de la Universidad Autónoma de Madrid* (UAM Luminescence Lab) at the top of the fluvial sequence in the Galería Principal. However, a personal communication from D. Granger suggests a cosmogenic age of 990 ka in the Sala del Caos gravel level. At the same level of gravels, a paleomagnetic study revealed a normal polarity, presumably Brunhes.

So establishing a chronological framework for this fluvial sequence in Cueva del Silo is important in order to better understand the connection between the evolution of the karst system and the incision history of the Arlanzón River. With this objective in mind, six sediment samples were collected in two outcrops, Galería de las Arenas and Sala del Caos, in order to provide the first ESR chronology of this fluvial sequence. Our first results suggest an age of Lower Pleistocene for these deposits which seems consistent with the known geological data.

Keywords: ESR dating; fluvial sediments; bleached quartz; Pleistocene; Atapuerca sites complex;