LUMINESCENCE DATING OF FLUVIAL DEPOSITS IN THE ROCK SHELTER OF CUEVA ANTÓN, SPAIN

SUPPLEMENTARY MATERIAL
Fig. S1. Beta source dose rate distributions of three different single grain luminescence readers. Calibration of the beta sources was done using a calibration quartz that was thermally sensitised and homogeneously dosed to 8.03 Gy using a ^{60}Co gamma source. About 500 individual $D_s$ estimates (in seconds) in average were obtained for each reader. To allow for comparability between individual beta sources, plots d), e) and f) show the dose rate distributions normalised by their corresponding mean dose rate, with the z-axis brought to the same scale. While d) and f) indicate a near-uniform dose rate distribution, c) a clear trend in delivered dose was identified for Reader C.
Fig. S2. Deconvolved LM-OSL curves from a regenerated signal of 8 mm aliquots of samples CA-1 and CA-6 following a 54.4 Gy beta dose. LM-OSL was carried out by constantly increasing the light intensity from 0 to 36 mW cm\(^{-2}\) over 1000 s and a read temperature of 125ºC, after a preheat of 200ºC for 10 s. An immediate second LM-OSL readout was conducted on the same aliquot to measure the background signal.

Fig. S3. Number of mineral grains on a sample disc as a function of the aliquot diameter, mean grain size and packing density. a) The number of grains (here shown for a mean grain size of 125 µm) on an aliquot strongly depends on packing density d. The commonly assumed packing density of 0.907 overestimates the number of grains on the aliquot because only a mean packing density of 0.65 is achieved during sample disc preparation. b) The amount of grains on an aliquot for commonly measured mean grain sizes. Due to the high number of grains in the grain size fractions 4–11 µm and 40-63 µm with increasing aliquot diameter the inset is shown for proper scaling.
REFERENCES
