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Verification of the external irradiation process for the LF02 automated luminescence reader

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In OSL dating of sediments the application of the single aliquot regenerative (SAR) protocol requires the calibration of each aliquot by giving them a known dose using an internal beta source with a dose rate ranging from 100 to 30 mGy/s. In the case of old samples that have received in natural conditions doses higher than 70 Gy the time employed to equate this dose may be significant. One distinctive feature implemented in the LF02 automated luminescence reader is the possibility of external irradiating the samples without manipulating them. The goal of this process is to reduce the total irradiation time by simultaneously irradiating all the aliquots in a gamma cell facility. The aim of the present work is to establish the conditions and the dose rate of the external irradiation process when using the gamma irradiation facility at CEADEN.

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