SINGLE GRAIN OSL DATING OF MIAM QANAT SYSTEM IN NE IRAN AND SLIP RATE DETERMINATION OF DASHTEBAYAZE FAULT

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ABSTRACT

In Iran many of qanat galleries were dug in the vicinity of, or directly upon, active faults. In some areas such as Dashte-bayze fault, line of craters are displaced by the activity of the fault, which lead to dry qanat stream, and consequently to dig new shafts by habitants. By means of measuring the offset between new shafts and old shafts, and considering qanat antiquity, the estimation of fault slip-rate - which is one of the prominent elements in hazard assessment - becomes possible. However, the direct dating of qanats has been problematic as no suitable method for determining the timing of construction and maintenance has yet been suggested. This article presents absolute age for a qanat system, obtained through optically-stimulated luminescence dating of grains in spoil heaps of Qanat wells. Feldspar single-grain dating of silt sediments that overlie construction spoil show that the Miam qanat was maintained until at least 1.6-2.6 ka. This age is the first absolute date of that advanced irrigation technologies existed in the NE