

Dating the depositional age of Quaternary sediments using OSL techniques

Joel Spencer

Institut für Geologie und Paläontologie, Universität Innsbruck, Innrain 52, A-6020 Innsbruck, Austria (joel.spencer@uibk.ac.at)

Optically stimulated luminescence (OSL) dating is a relatively recently developed chronological technique that is now considered as a reliable method for dating the depositional age of Quaternary sediments. Numerous studies have demonstrated accurate OSL age comparison to 'known-age' material, and these comparative data span a broad range of ages. Examples include OSL ages as young as 30 years, ages spanning the range of radiocarbon chronologies, and extending into orbital chronological timescales with results dating MIS 5e and as far as 700 ka and 1.6 Ma. Samples dated in these examples were collected from a range of sedimentary environments and they were measured using various recently developed techniques in luminescence dating.

Austria's first laboratory dedicated to dating the depositional age of Quaternary sediments using OSL techniques was established in the Quaternary Science group at the Institut für Geologie und Paläontologie, Universität Innsbruck in 2005. This presentation will introduce the facilities and dating techniques employed and will discuss aspects such as accuracy and OSL age range.