Deciphering Landscape Archives of the Sila Massif by linking ^{10}Be and $^{239/240}Pu$

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Earth surfaces are constantly re-shaped through several processes. Among those, soil erosion plays a prominent role as it has a severe environmental and economic impact. Changing environmental conditions give rise to temporal variations of soil erosion rates. Most studies have provided so far average (soil) erosion rates by often using a catchment-wide approach and failed to capture the full variability over time. In this study, a multi-method approach enabled to unravel a long-term archive and decipher soil erosion rates during the Holocene and Pleistocene. Using cosmogenic nuclides (^{10}Be) along boulder and tor profiles coupled with fallout radionuclides ($^{239+240}Pu$) in soils and numerical modelling, the link between tectonics and climate conditions in an upland plateau area of the Mediterranean could be explored more in detail. Using this approach, regressive or progressive phases of soil formation could be identified for the last 100 ka. The usage of multiple isotopes having a different origin (and half-life) is promising for tracking earth surface processes.