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Incision rate of the Oshika-gorge, Tottori-prefecture, estimated from Terrestrial in site Cosmogenic Nuclides dating

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Incision rates of the Oshika-gorge, in Misasa, Tottori-prefecture were estimated from Terrestrial in site Cosmogenic Nuclides (TCN) dating of the strath terraces developed at a bend of the gorge (N35 22'18", E133 58'26"). The bedrock of the gorge consists of granite. At a surveying point, 7 terraces and present streambed were distinguished and we collected 8 samples of each surface site for TCN surface exposure dating. According to Kohl and Nishiizumi(1992), we extracted ¹⁰Be and ²⁶Al. Measurement of ¹⁰Be/⁹Be and ²⁶Al/²⁷Al ratios by accelerator mass spectrometry was undertaken at the Micro Analysis Laboratory, Tandem accelerator (MALT), the Univ. of Tokyo. Exposure ages of each terrace calculated from ¹⁰Be/⁹Be ratio and ²⁶Al/²⁷Al ratio gave close agreement with each other. Surface exposure ages of two strath terraces were calculated as No.1 strath terrace (relative height, 11.21m): 57.2+3.33 kyr and No.7 strath terrace (relative height, 1.64m): 10.4+0.80kyr. An incision rate of the Oshika-gorge at the surveying site for last 60kyr is 0.2 m/ kyr (0.2 mm/yr).

Keywords: incision rate, Oshika-gorge, strath terrace, TCN ages, dynamic equilibrium, Misasa, Tottori prefecture