

Consistency between fission-track and U-Pb ages of zircon and its implications

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Following the recommendation by the Fission Track Working Group of the IUGS Subcommittee on Geochronology (Hurford, 1990), the fission-track method was transformed into a simplified and user-friendly dating tool. Standardization based on the common use of international age standards is what is called the zeta calibration. However, the adoption of the standardization scheme in which fission-track ages are determined against reference ages (K-Ar, Ar/Ar, Rb-Sr), and not based on physical parameters directly associated with the fission process, meant that the fission-track method lost its status as an independent geochronometer. Over the last two decades, we have investigated the problems of the absolute calibration approach, and we have finally demonstrated that it works well for zircon when using the external detector method (Danhara and Iwano, 2013). One of our conclusions is that the fission-track age for the Fish Canyon Tuff is 28.4+/-0.2 Ma. This is concordant with the recent zircon U-Pb ages (Schmitz and Bowring, 2001; Bachmann et al., 2007) and slightly older than the sanidine Ar/Ar age of 27.8+/-0.2 Ma, which is the reference age for the zeta calibration. We will discuss the consistency between fission-track and U-Pb ages of zircon from volcanic samples and give some comments on fission-track age standardization.

Bachmann et al. (2007) *Chemical Geology* 236, 134-166.

Danhara and Iwano (2013) *Island Arc*, 22, 264-279.

Hurford (1990) *Chemical Geology*, 80, 171-178.

Schmitz and Bowring (2001) *Geochimica et Cosmochimica Acta* 65, 2571-2587.

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