

## New constrains on timing of staged MTL fault activity during exhumation in SW Japan

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The Median Tectonic line (MTL) preserves fault rocks that formed across a broad range of physical conditions and was in detail investigated within the Awano-Tabiki outcrop (Shigematsu et al., 2017). Four main deformation stages were identified based on extensive field observations, microstructural and XRD investigation but absolute timing of the stages remains unknown. This pilot study constrains the timing of the four stages with 11 fresh outcrop samples. Sample were prepared and separated based on methods developed by Zwingmann et al. (2010). In total 25 grain size fraction ranging from 0.1 to 2-6 micron were analysed by K-Ar age dating. The obtained K-Ar ages range from ~ 6.5 Ma (Neogene-Miocene-Messinian) to ~ 60 Ma (Paleogene-Palaeocene-Selandian) and cover an age range of ~ 53 Ma. The large spread of the obtained age data highlights that special sample preparation and characterization (SEM, XRD) is required to obtain valid age information from complex heterogenous fault zones. The ages of the 4 stages support a proposed model by Shigematsu et al. (2017) and will be discussed within the geological background of MTL geology.

### References

Shigematsu et al., 2017. *Tectonophysics*, 696-697, 52-59.

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