

# Size effect of fracture strength for sodic amphibole revealed from natural occurrence of microboudinage structures in metacherts

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Microboudinage structures of sodic amphibole in metacherts collected from Wakayama (Japan) were analysed in order to choose a suitable size-effect model of fracture strength for the mineral from the existing three models (effective-length, effective-area and effective-volume), and the effective-length model is to give a general formula for palaeo-stress estimation with the microboudins at any size as

$$\sigma = \lambda \cdot (1/w)^{1/2} \cdot S$$

where  $\sigma$  is the far-field differential stress,  $\lambda$  is a dimensionless stress parameter determined by the microboudin method,  $w$  is the mean width of sodic amphibole in millimeter, and  $S$  is the modal fracture strength with unit aspect ratio dimension 1 mm.