

Supplementary material :

First investigation of quartz and calcite shape fabrics in strained shales by means of X-ray tomography

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Table S1: Parameters of energy dispersive X-ray spectroscopy (EDS) images

Sample	A1	A2
Detected chemical element	C, O, Na, Mg, Al, Si, S, K, Ca, Ti, Fe	
Scanned surface (mm ²)	1.25	4.40
Pixel size (μm)	1.00	0.89

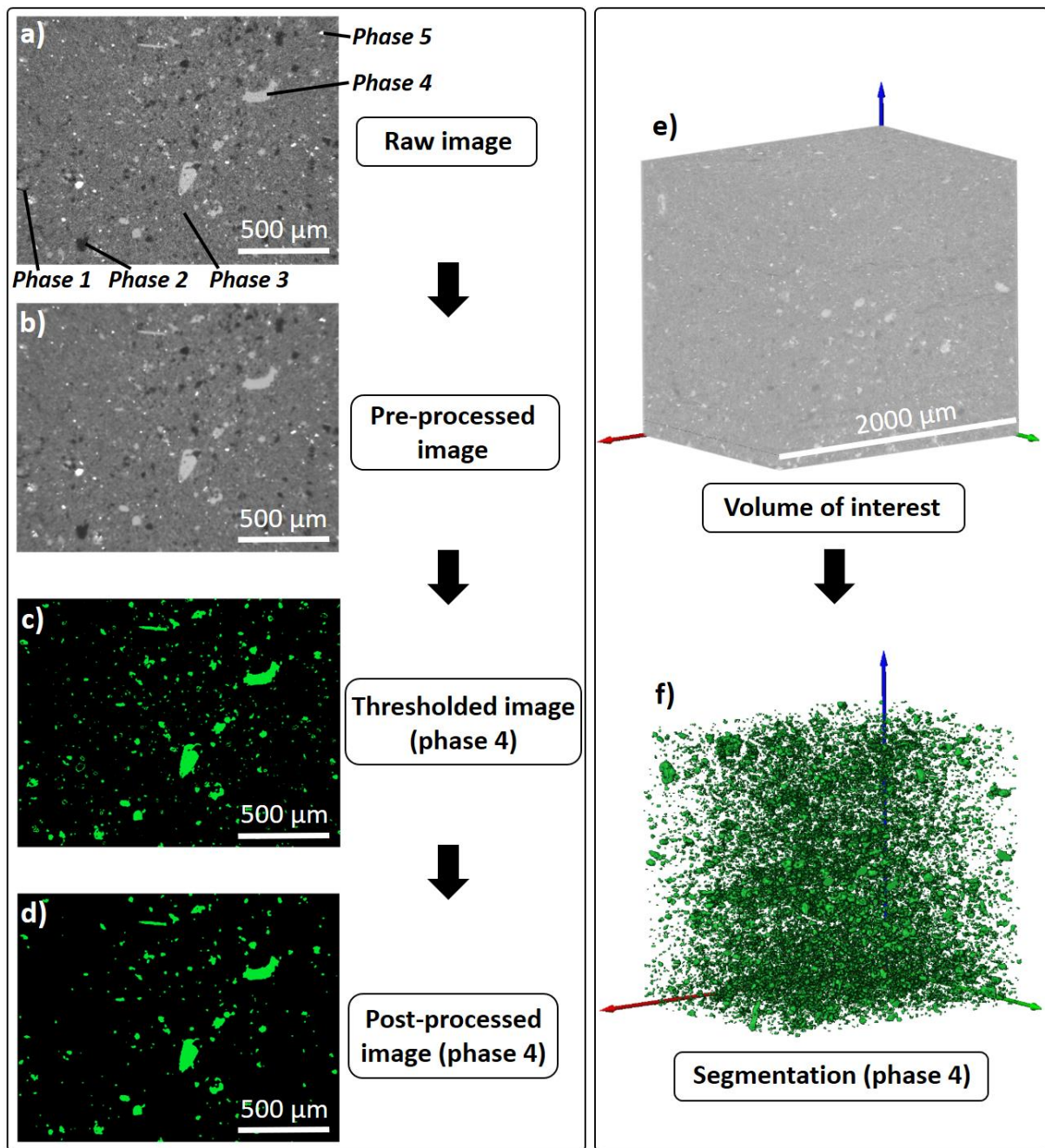


Fig. S1: Processing applied to XCT images. Example with sample A1: (a) Raw image, distribution of gray levels permits to distinguish five phases (Phase 1 to Phase 5), (b) image after application of an anisotropic diffusion filter and a despeckle filter in order to increase the signal to noise ratio, (c) manual thresholding of phase 4 in green (range of gray levels from 6950 to 8400), (d) phase 4 after application of morphological filters (opening followed by closing), (e) volume of raw XCT data is $2031 \times 1580 \times 1908 \mu\text{m}^3$ and (f) volume after processing for phase 4 (15932 particles).

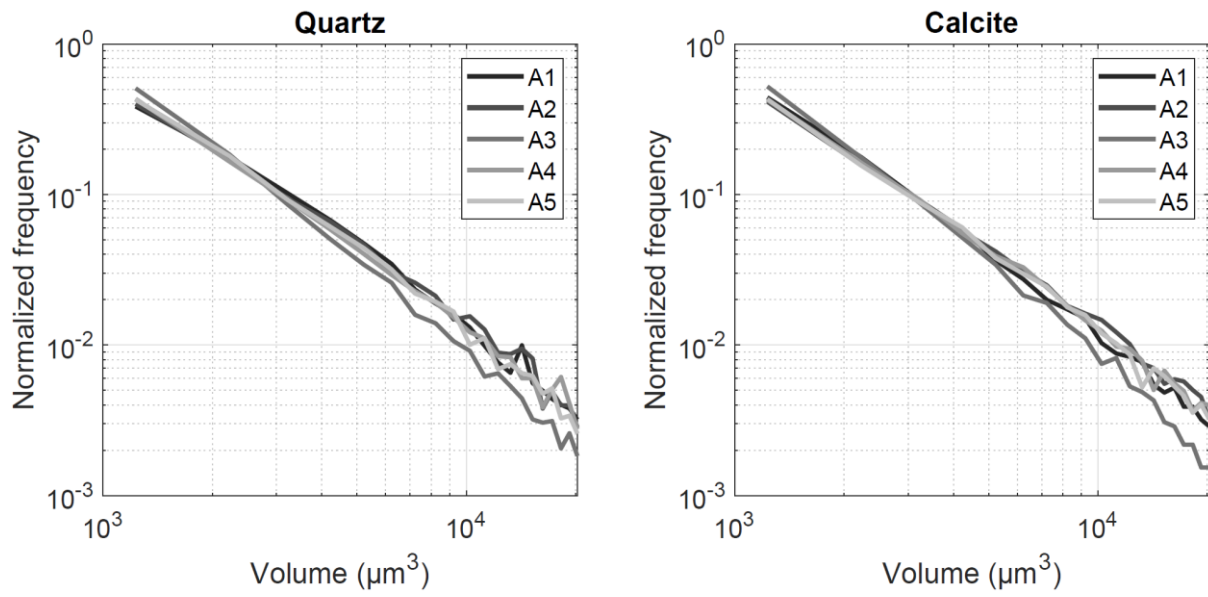


Fig. S2: Log-log normalized histogram of quartz (left) and calcite (right) grains for grain sizes below $20729 \mu\text{m}^3$ in the four samples. The bin size is equal to 1000. A1: cleavage-free; A2: onset of pencil-cleavage; A3: pencil-cleavage; A4: slaty-cleavage; A5: slaty-cleavage.

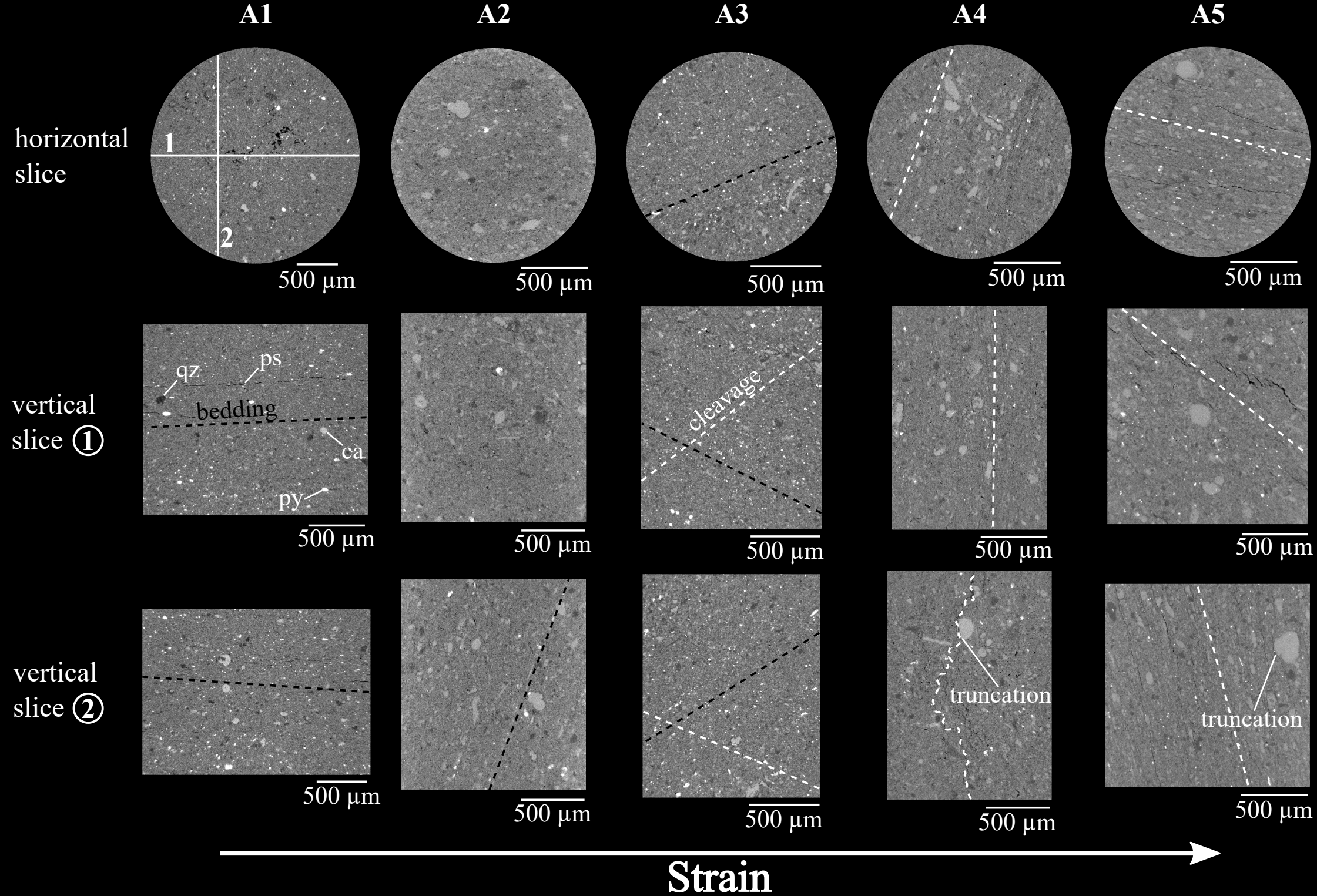


Fig. S3: Three orthogonal views of the raw XCT images in the coordinate system of the sample (A1 to A5).