

JGR: Solid Earth

Supporting Information for

Source mechanisms of laboratory earthquakes during fault nucleation and formation

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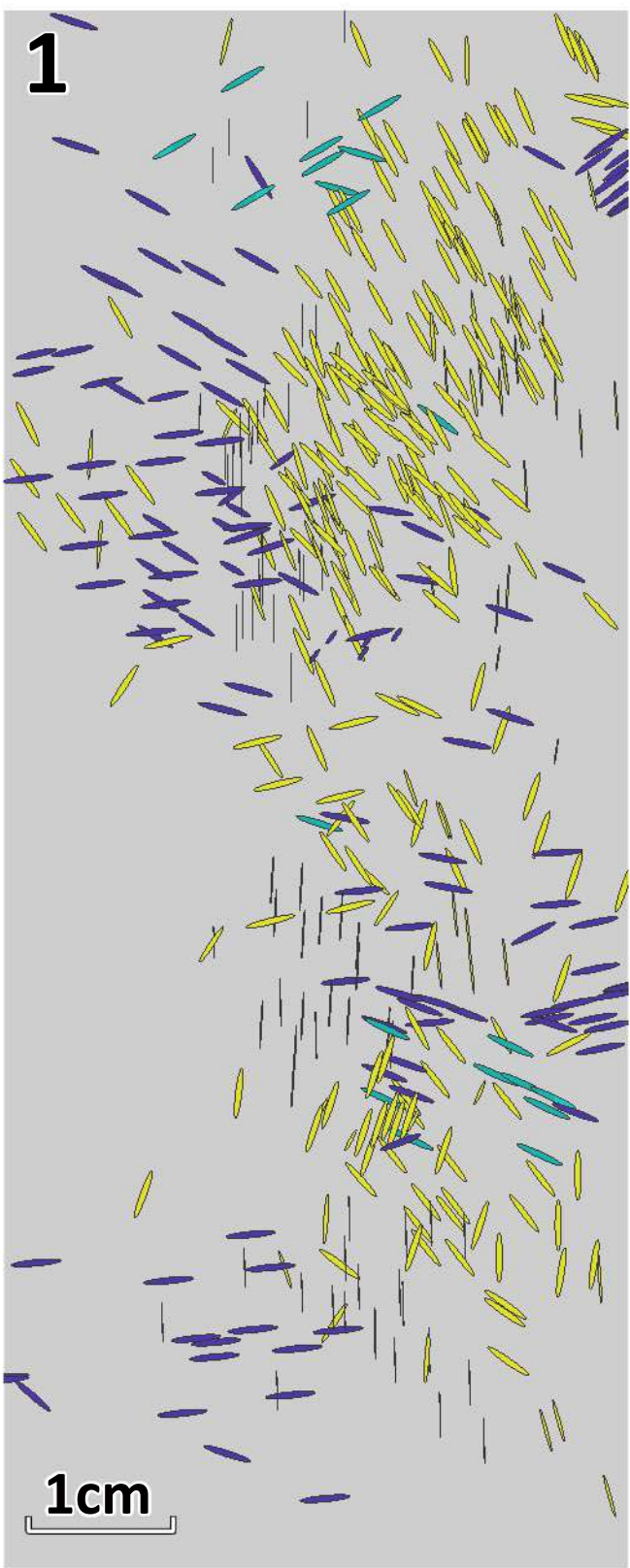
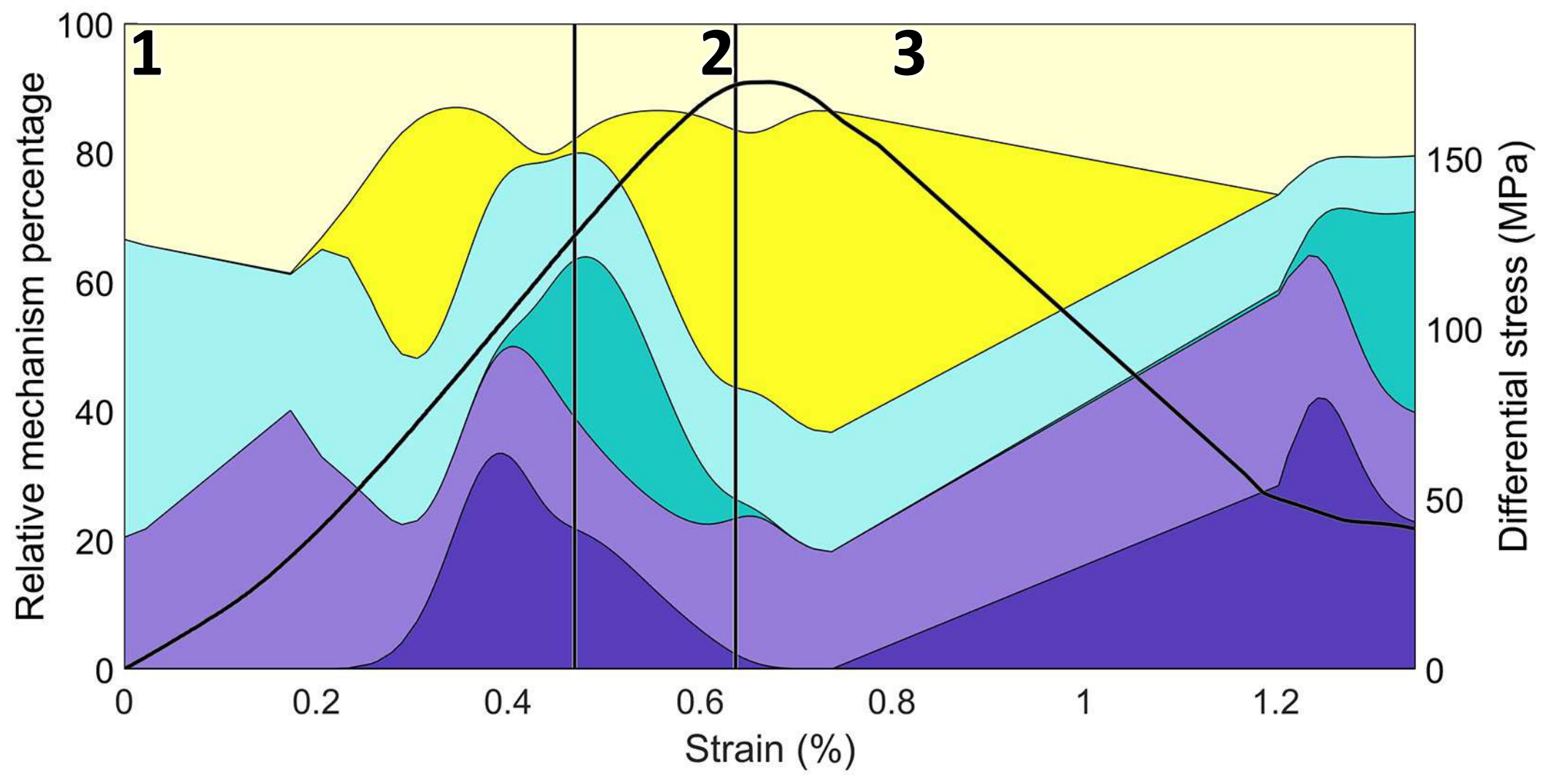
Introduction

These figures are the complete plot set for all the experimental setups. Please refer to the main text for more information on each type of plot. Each figure is identically laid out and is described as follows:

- a) Sample image (top left), source mechanisms (top right) and mechanism distribution during the three analysed deformation periods (bottom).
- b) Mechanism divergence during the three analysed deformation periods.

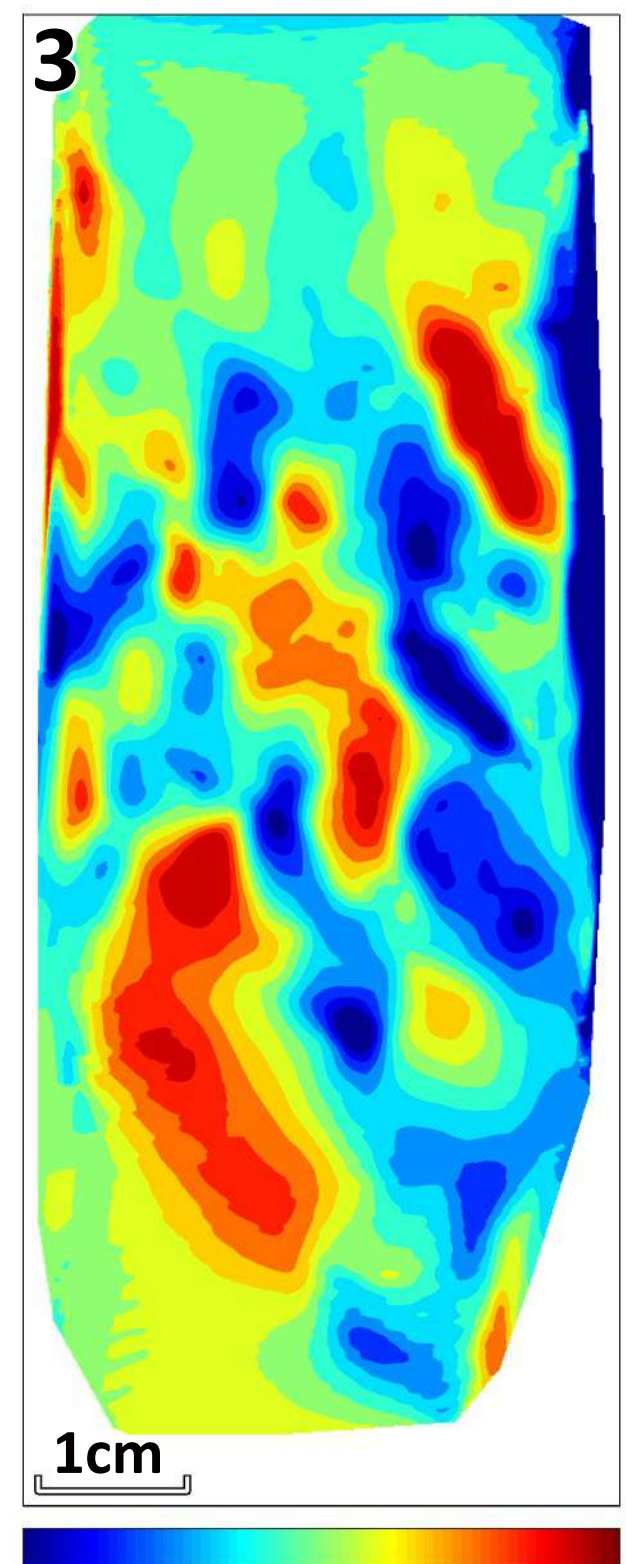
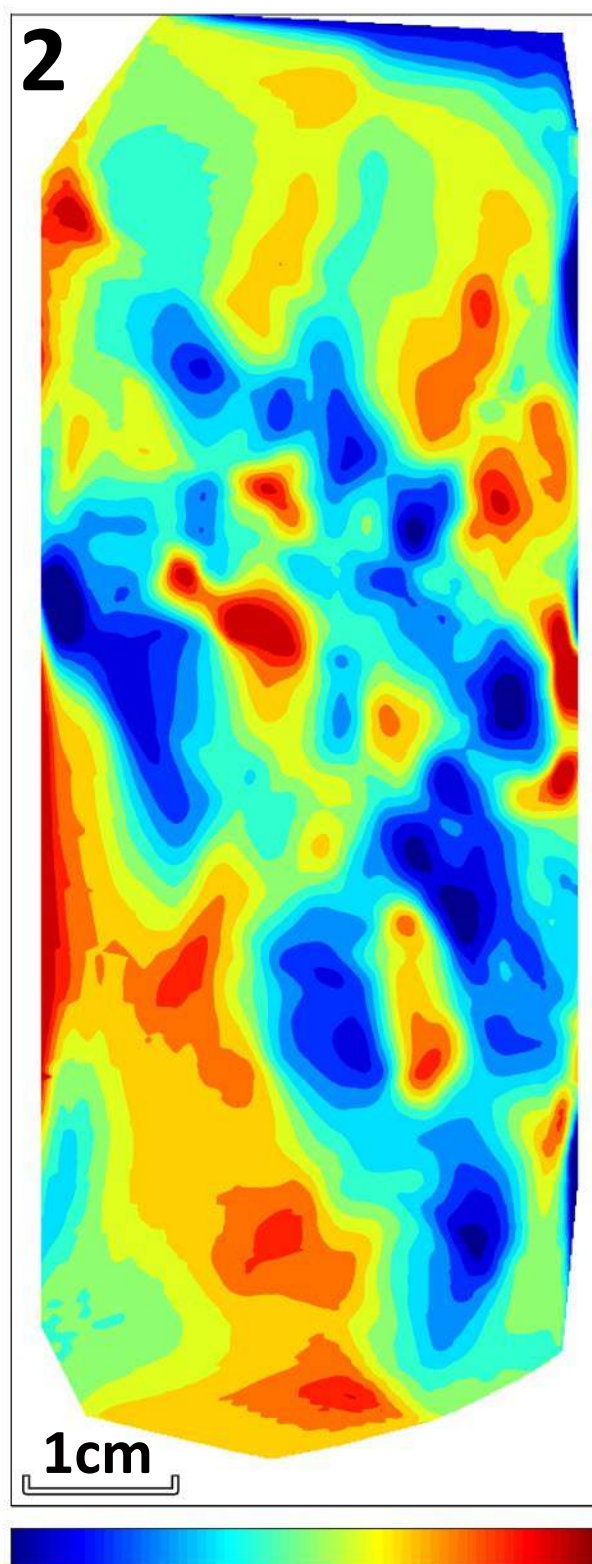
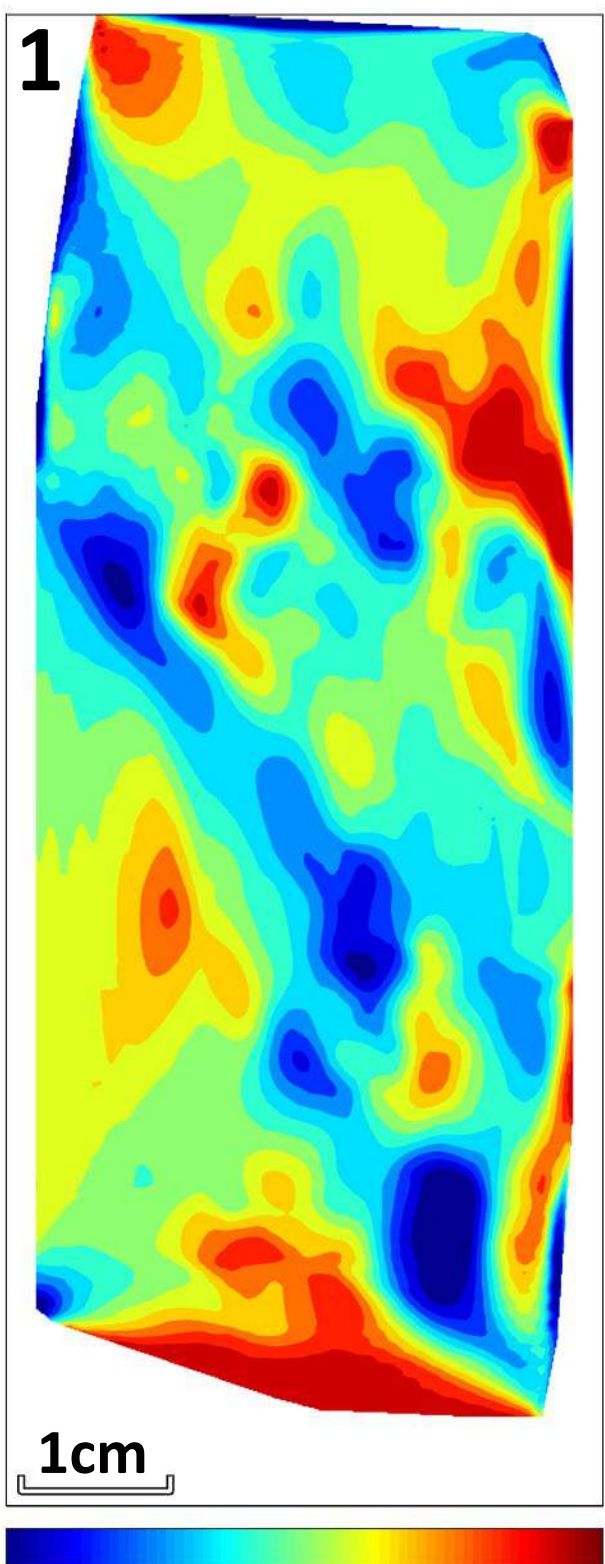
Alzo Granite at 5 MPa

a



T-type
 S-type
 C-type
 D. stress
 High amplitude
 Low amplitude

b



Compaction

Dilation

Compaction

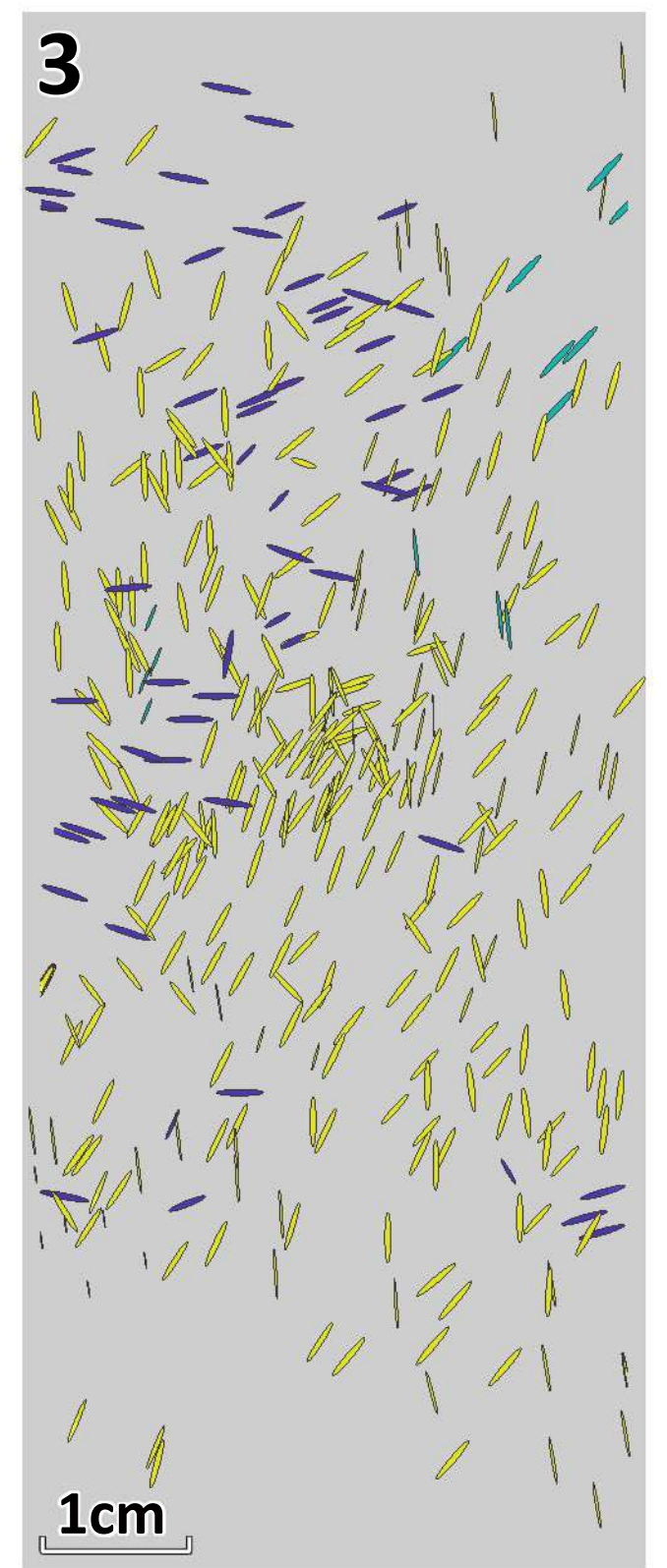
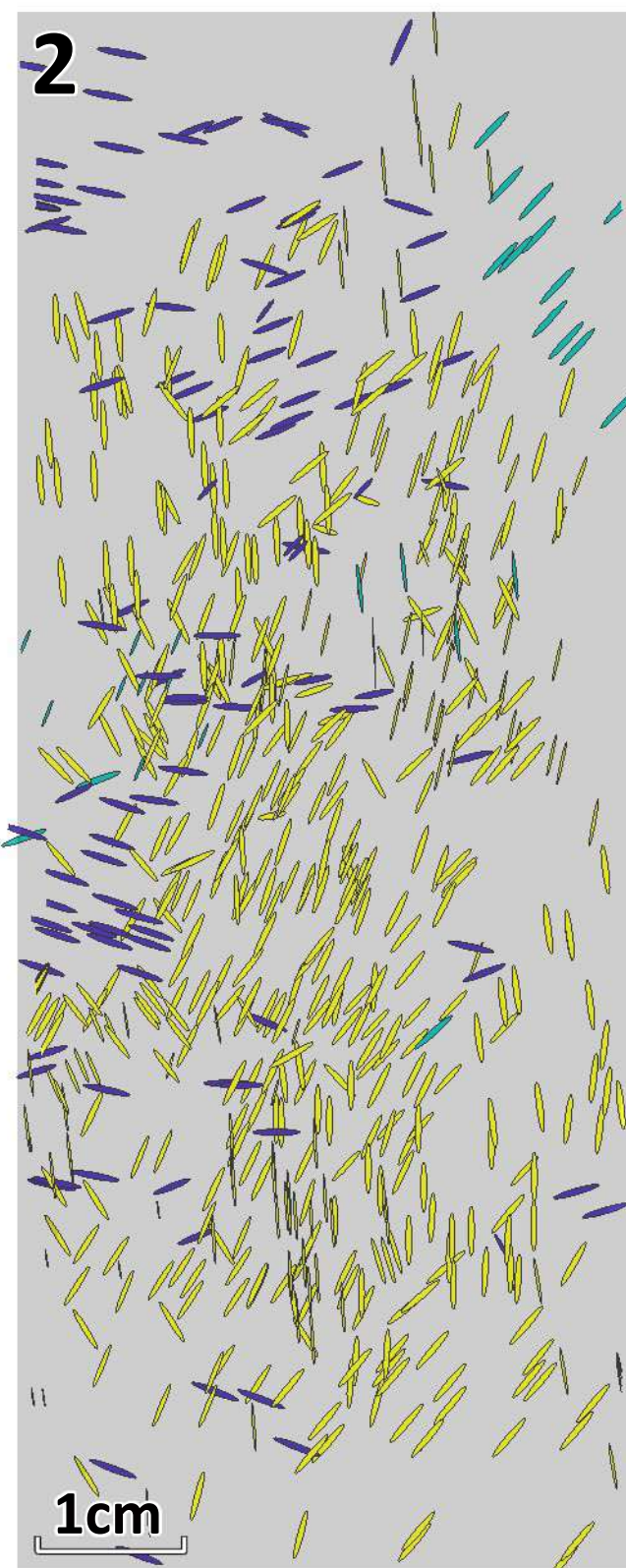
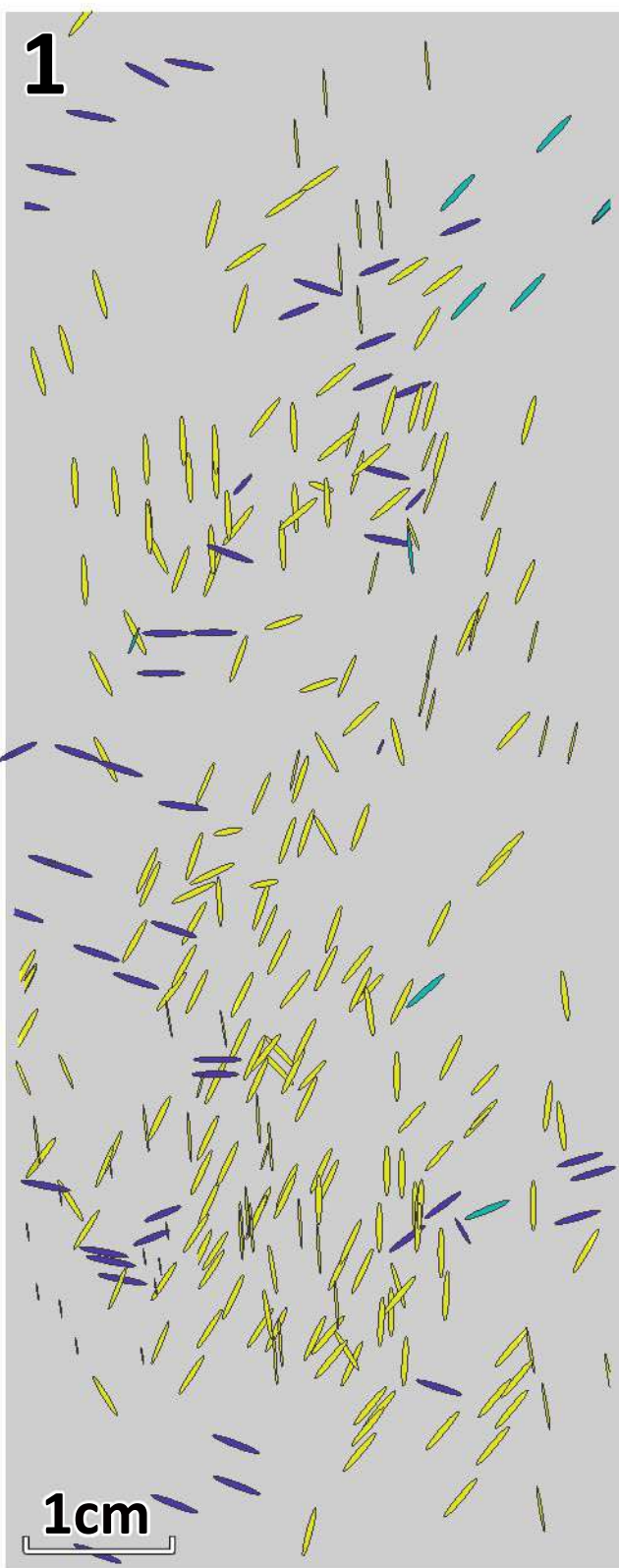
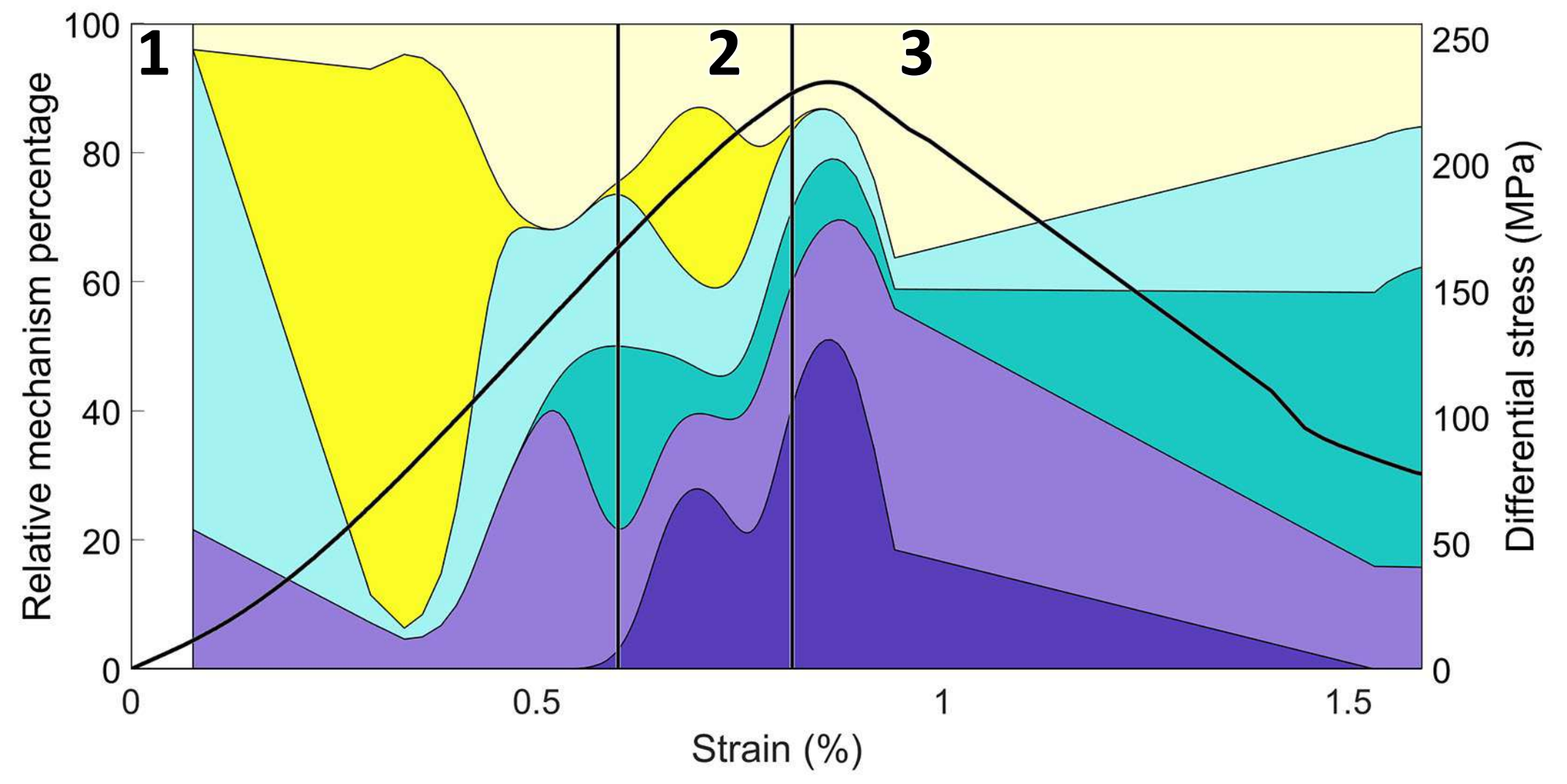
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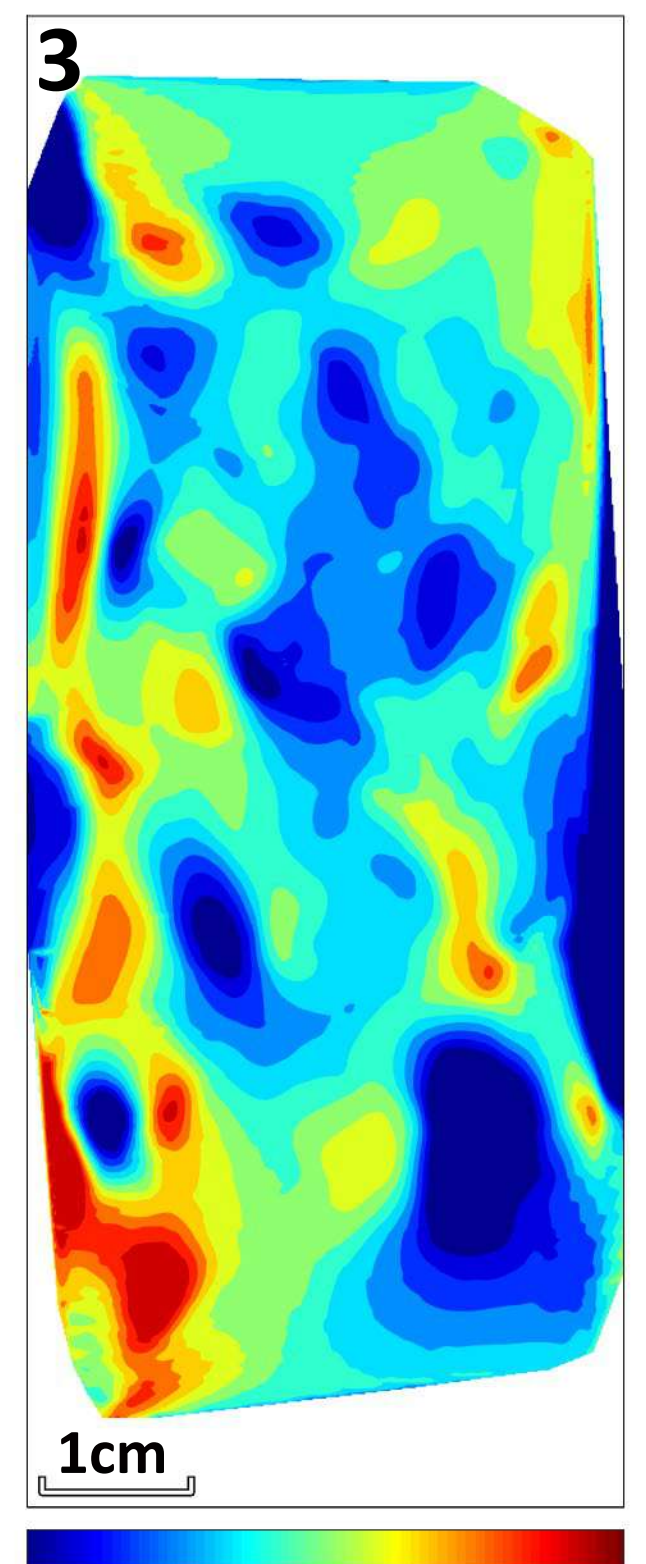
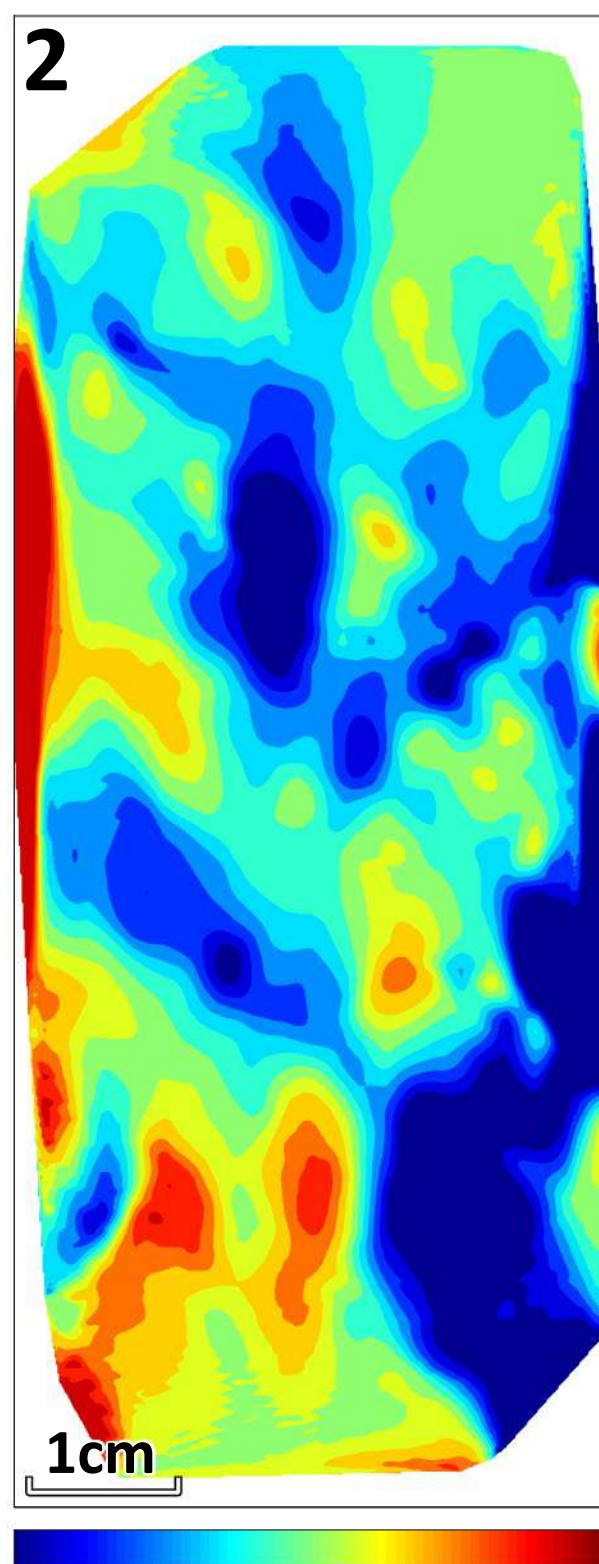
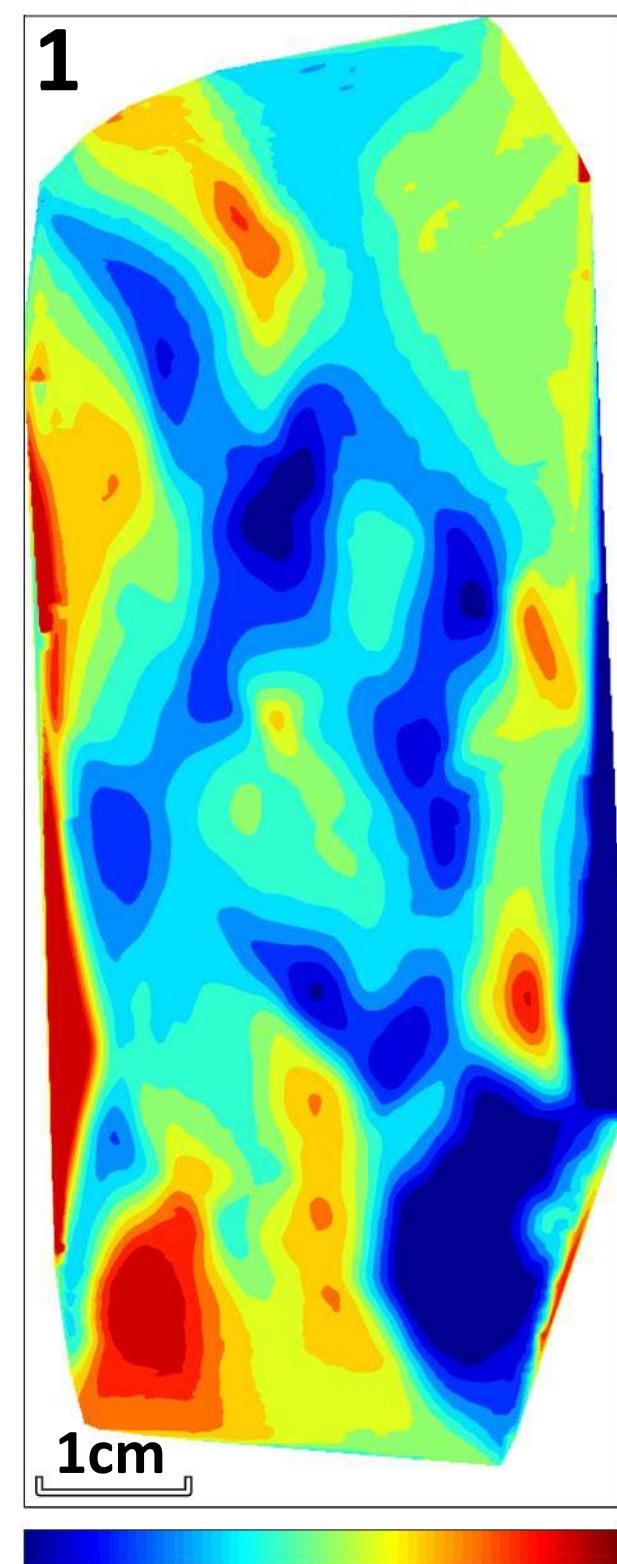
Alzo Granite at 10 MPa

a



■ T-type ■ S-type ■ C-type — D. stress
■ High amplitude ■ Low amplitude

b



Compaction

Dilation

Compaction

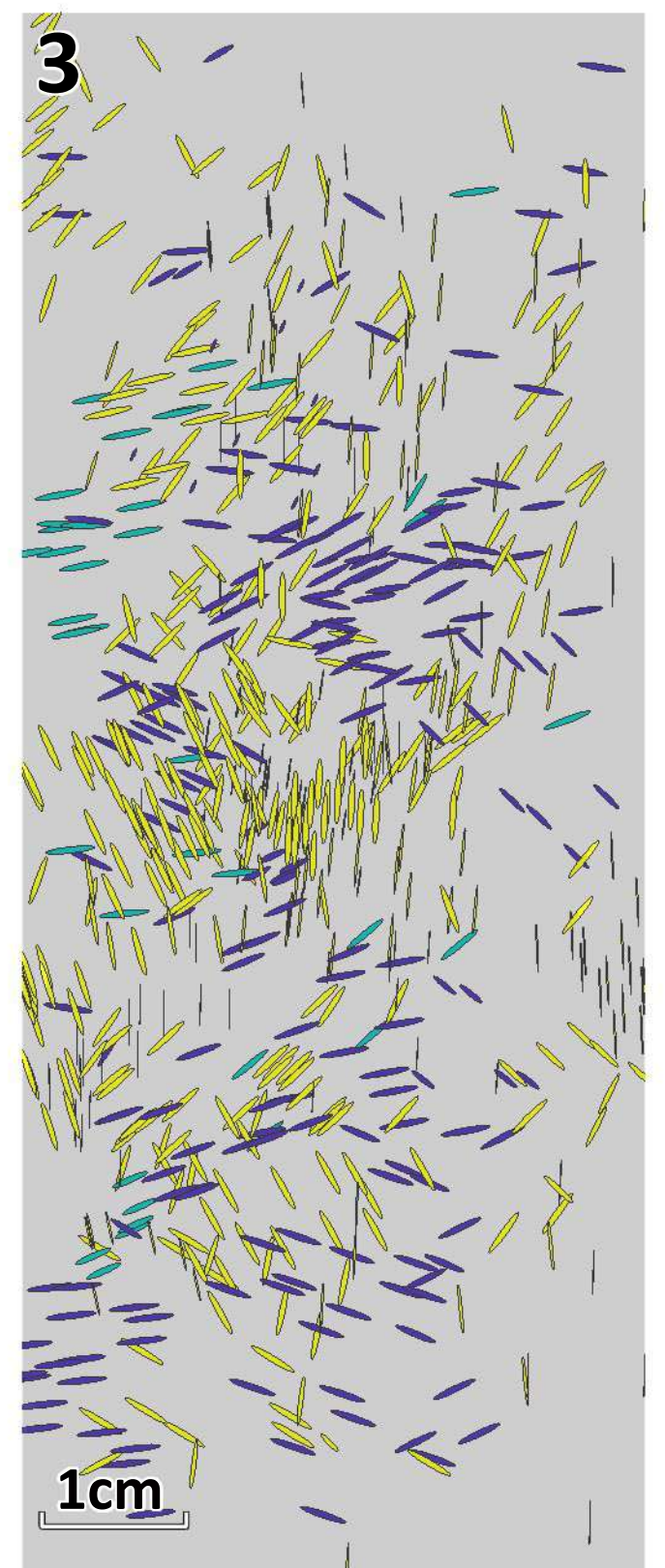
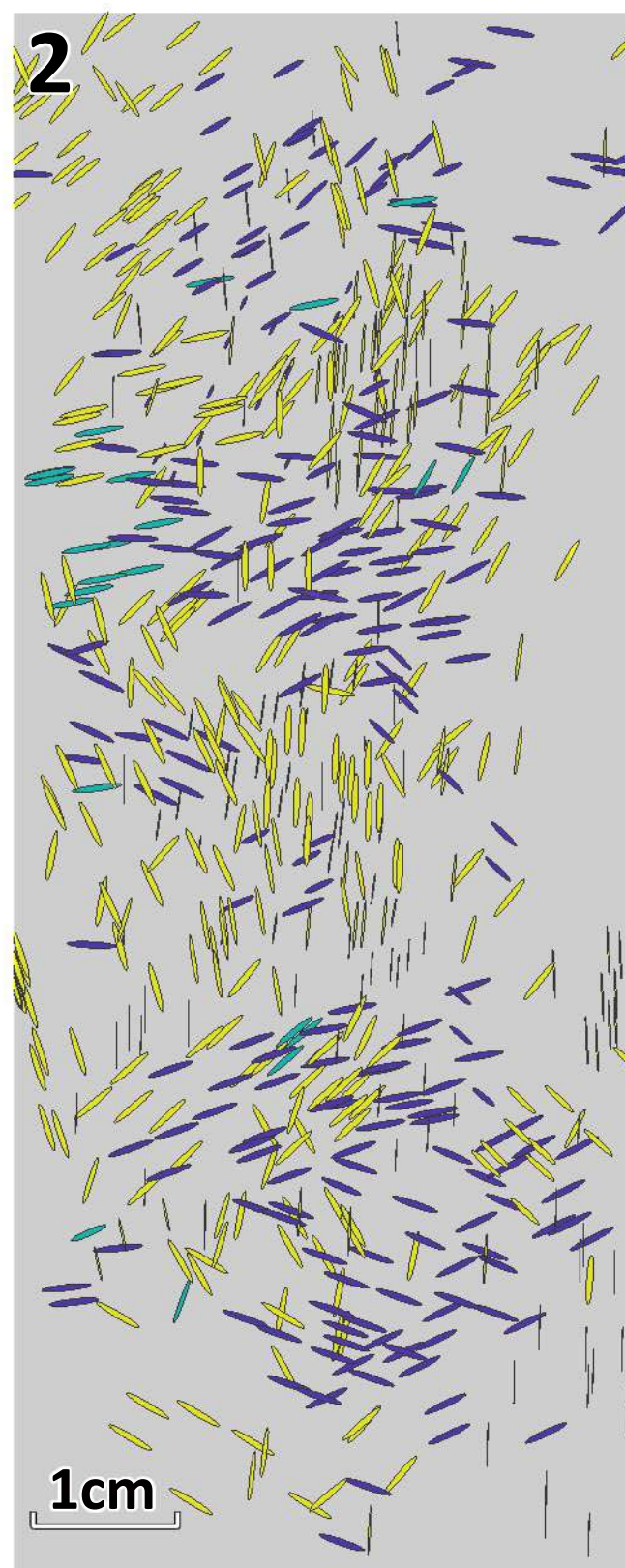
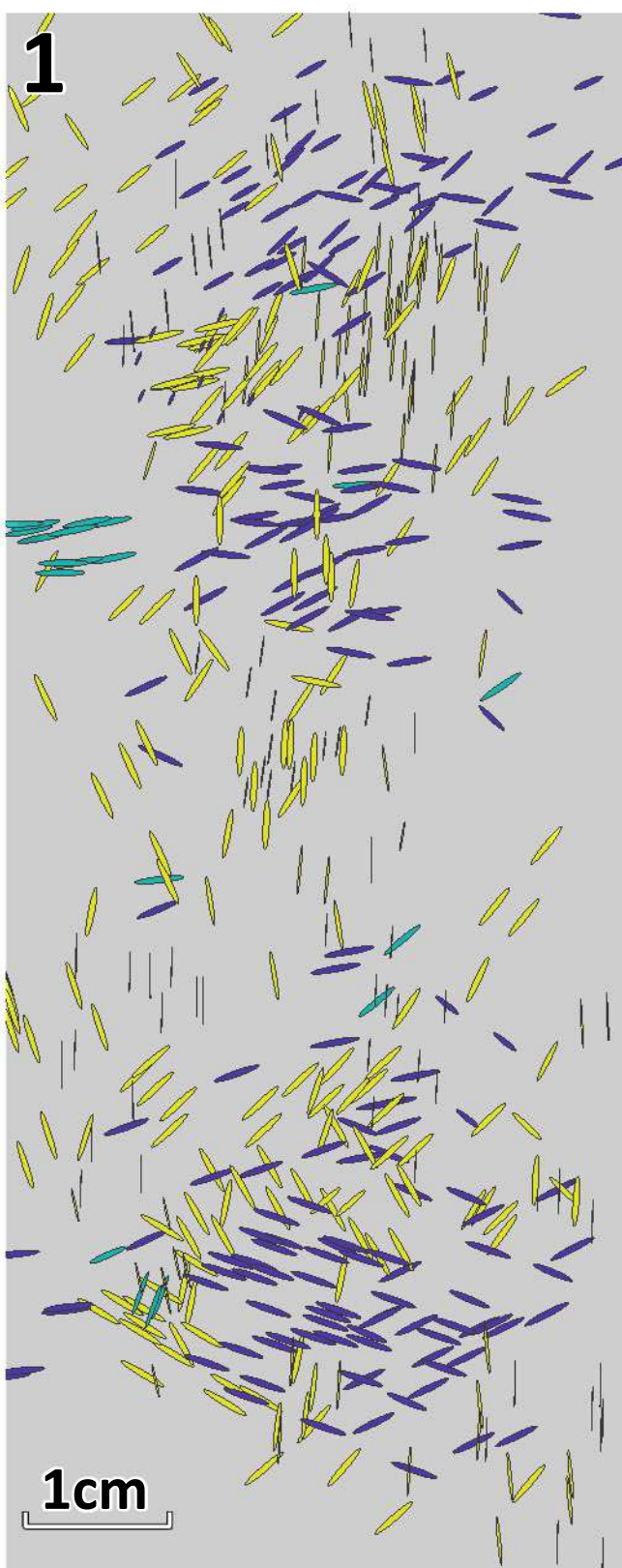
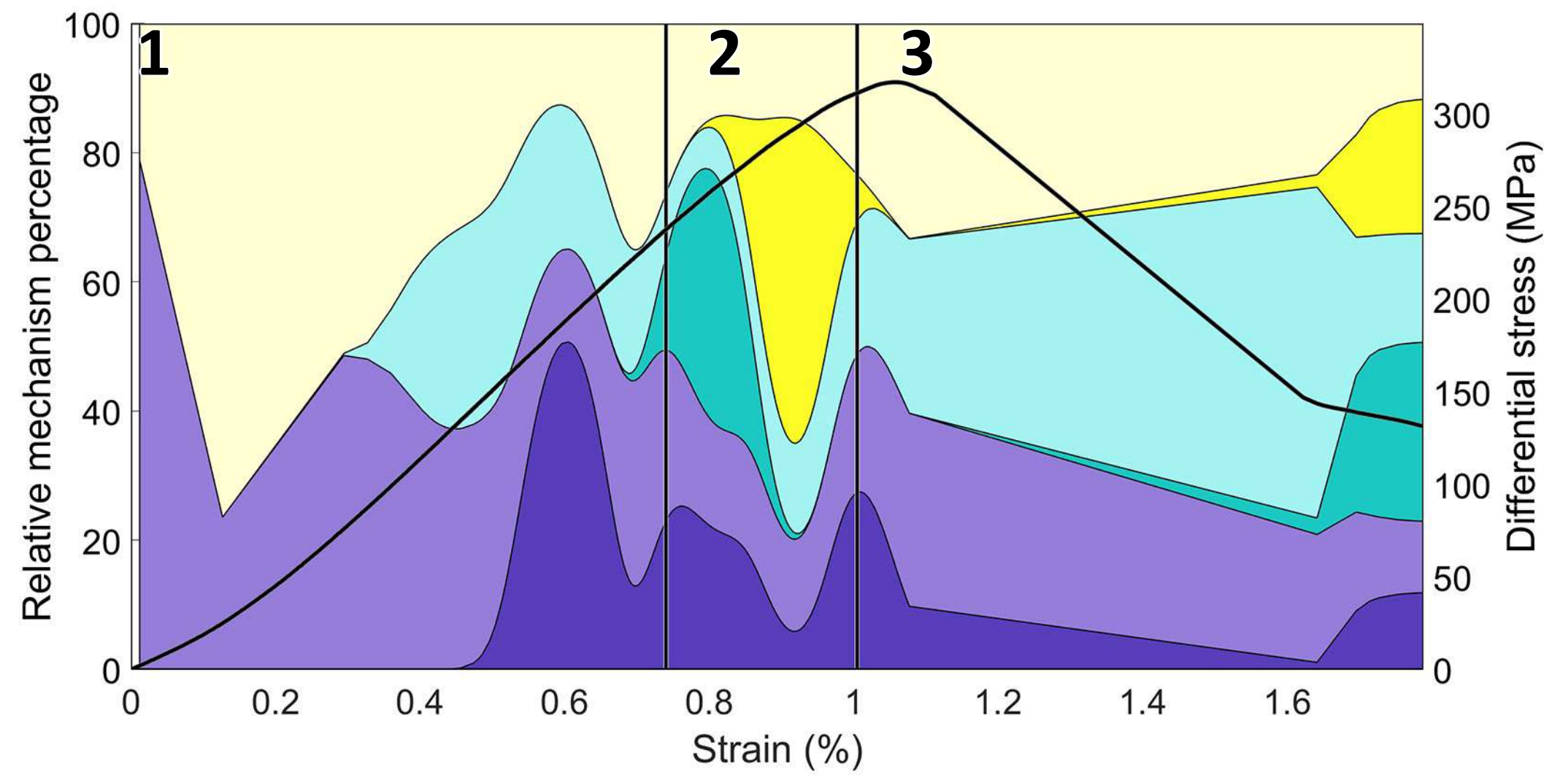
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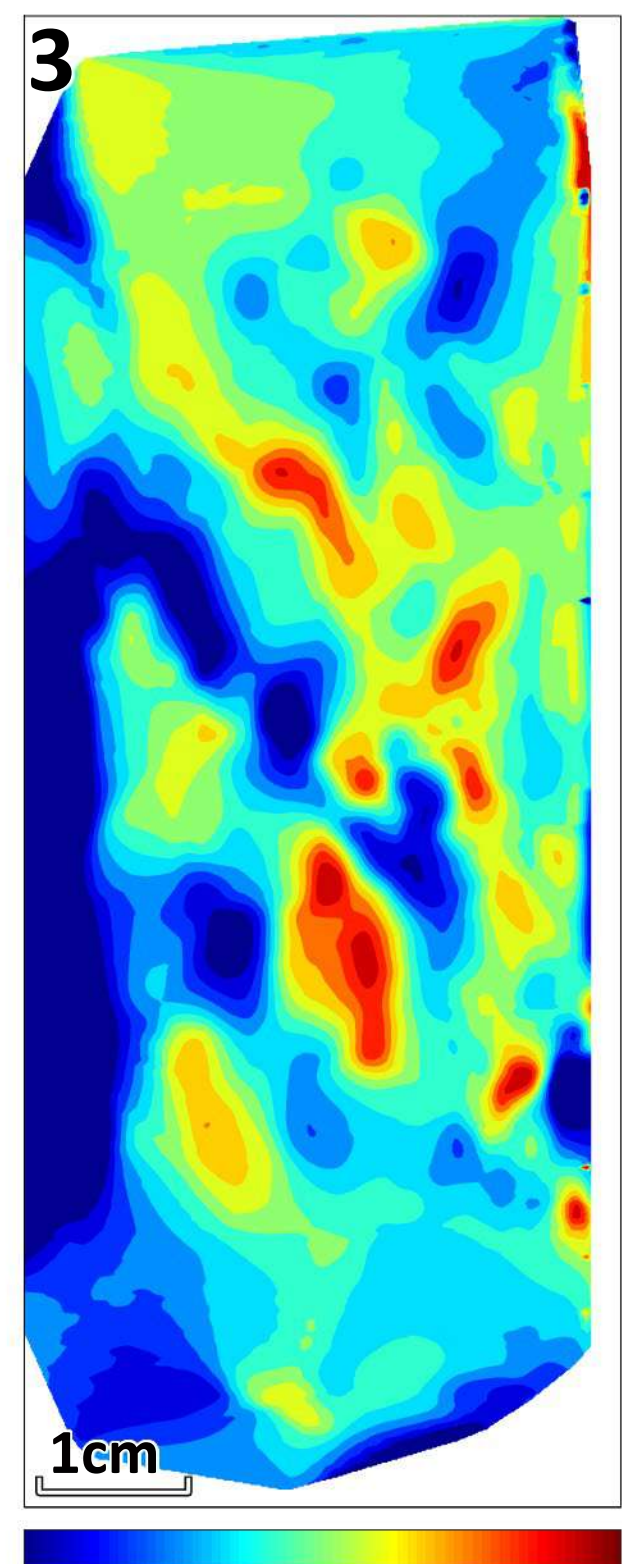
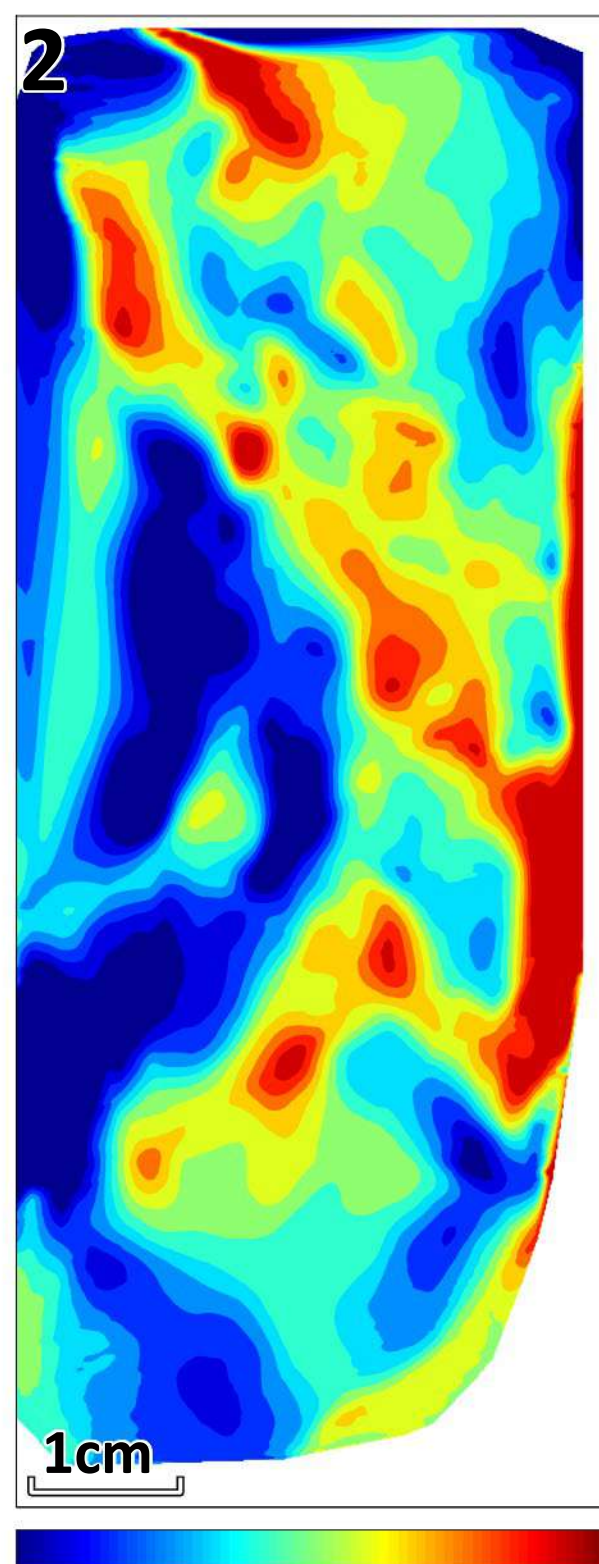
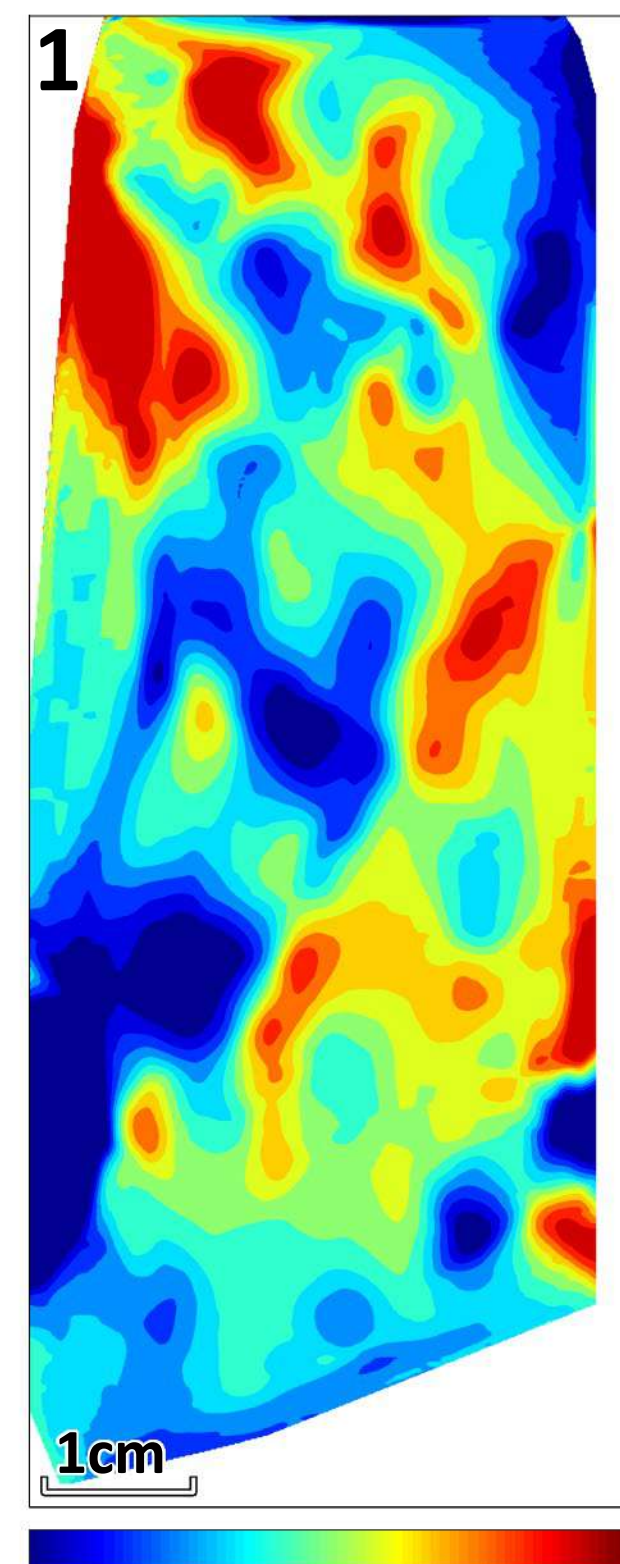
Alzo Granite at 20 MPa

a



Legend for crack types and stress:
Yellow: T-type Teal: S-type Purple: C-type Black line: D. stress
Grey: High amplitude Dark grey: Low amplitude

b



Compaction

Dilation

Compaction

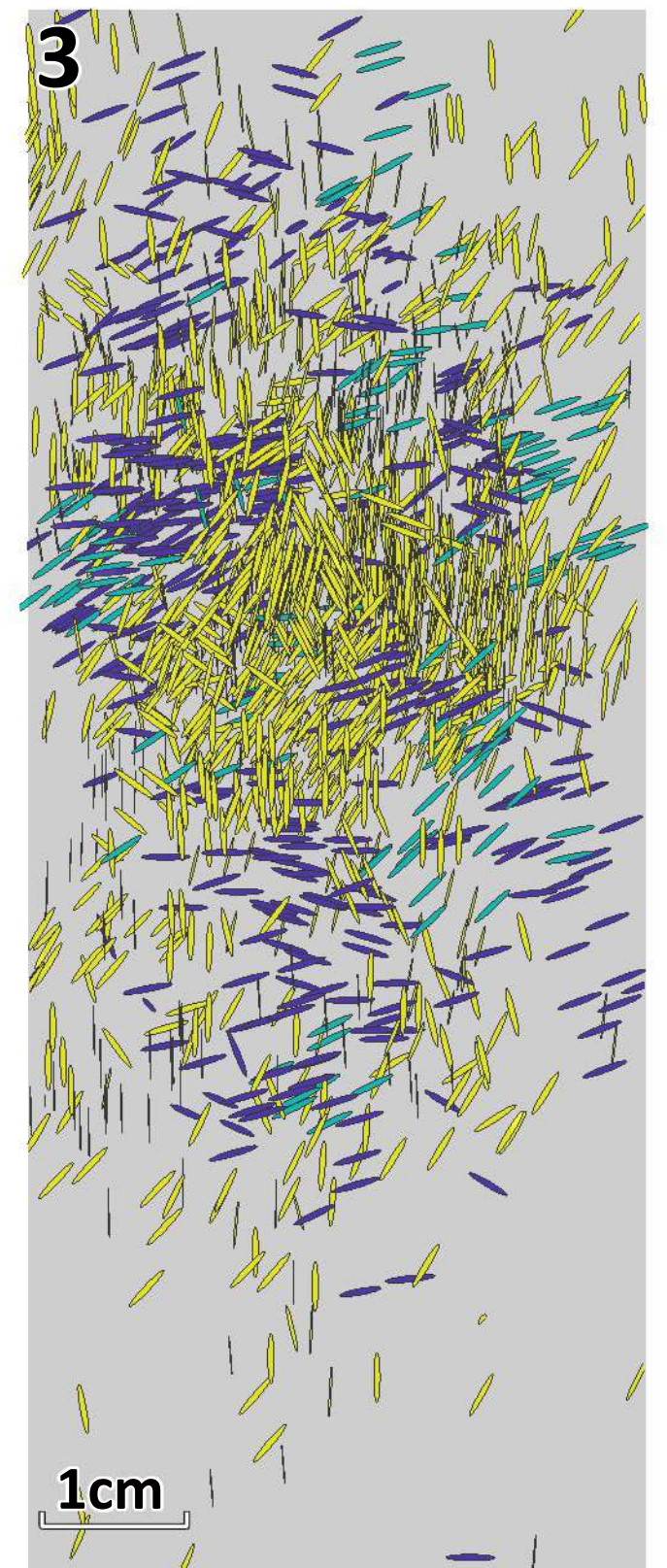
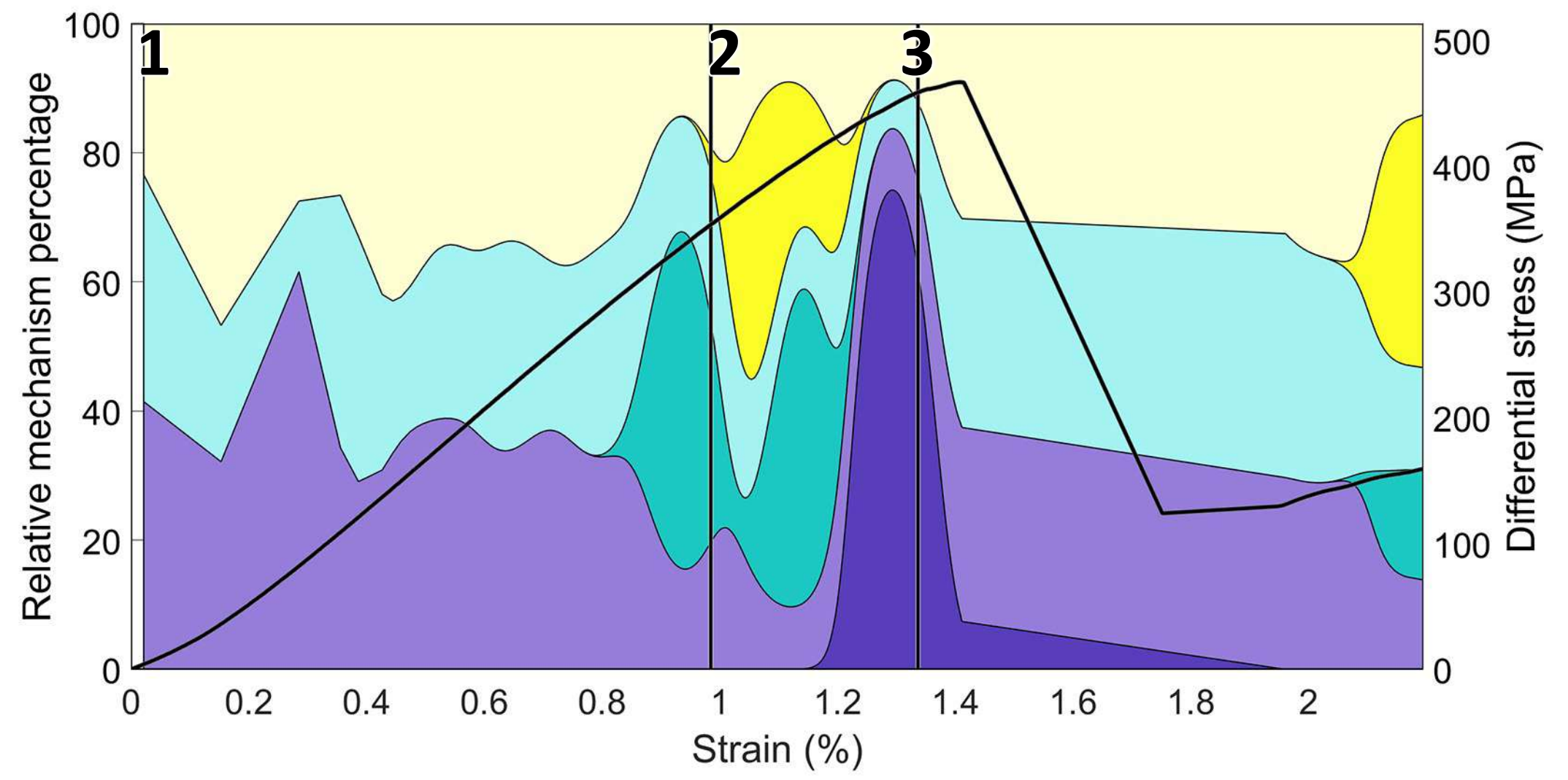
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Compaction

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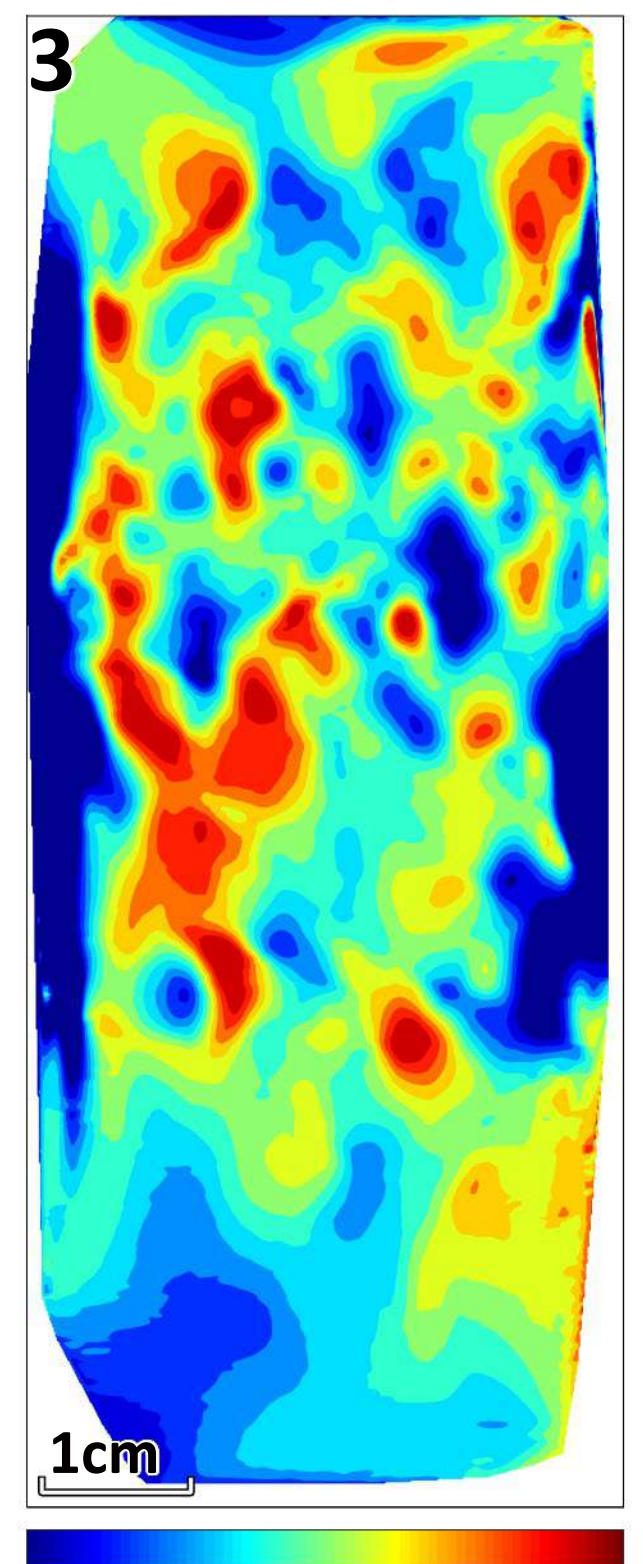
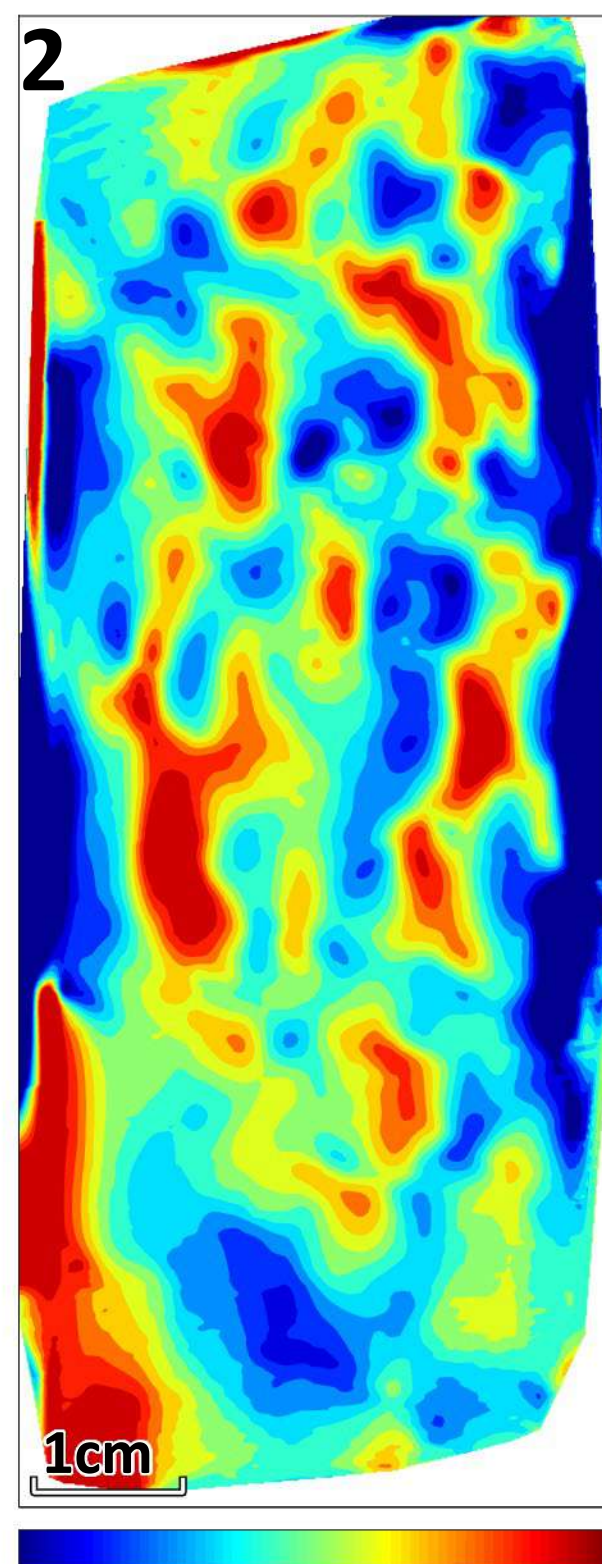
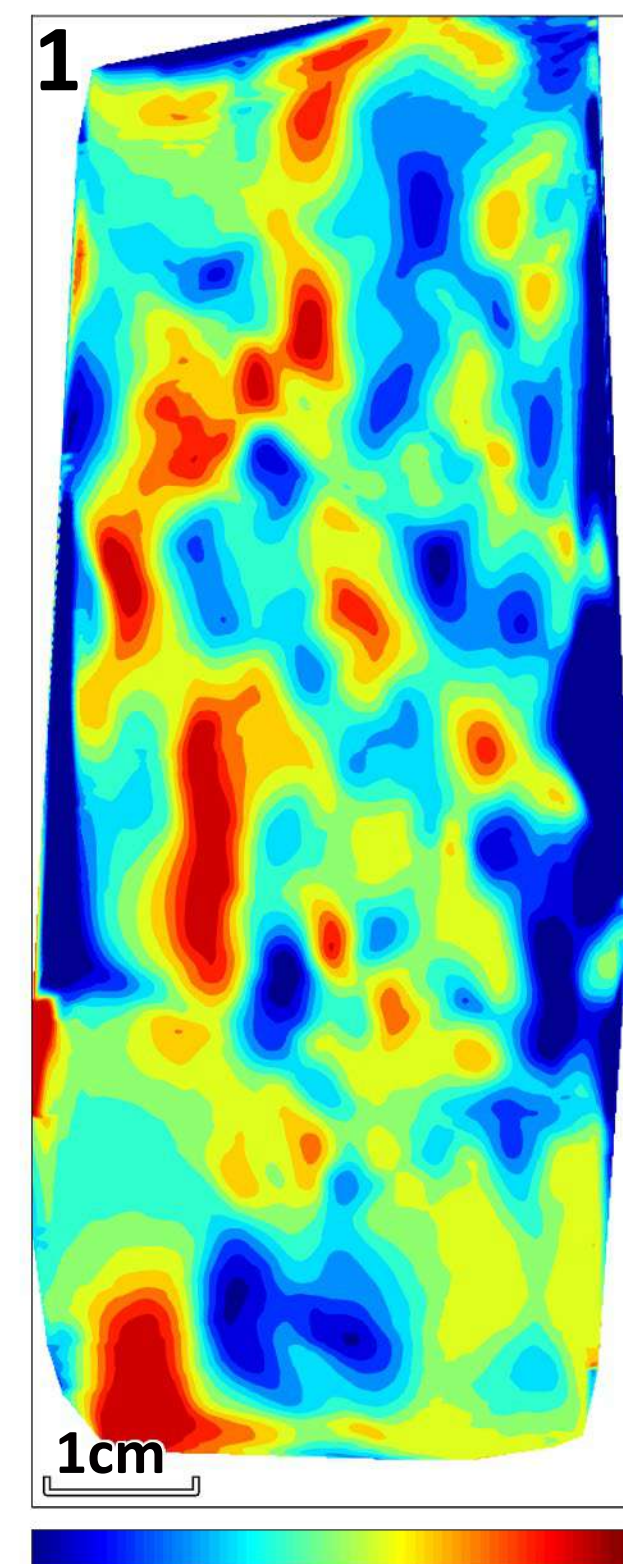
Alzo Granite at 40 MPa

a



Legend for mechanism types and stress levels:
T-type (Yellow), S-type (Teal), C-type (Purple), D. stress (Black line)
High amplitude (Grey), Low amplitude (Dark Grey)

b



Compaction

Dilation

Compaction

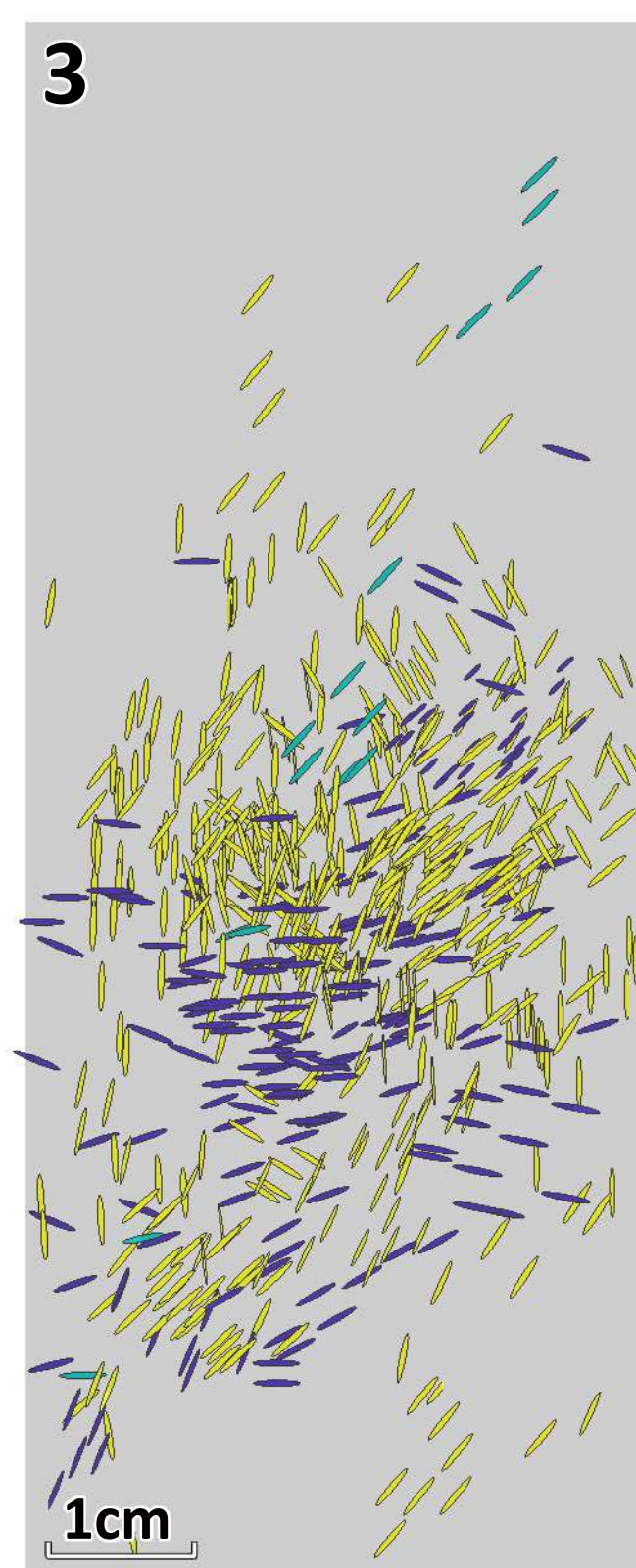
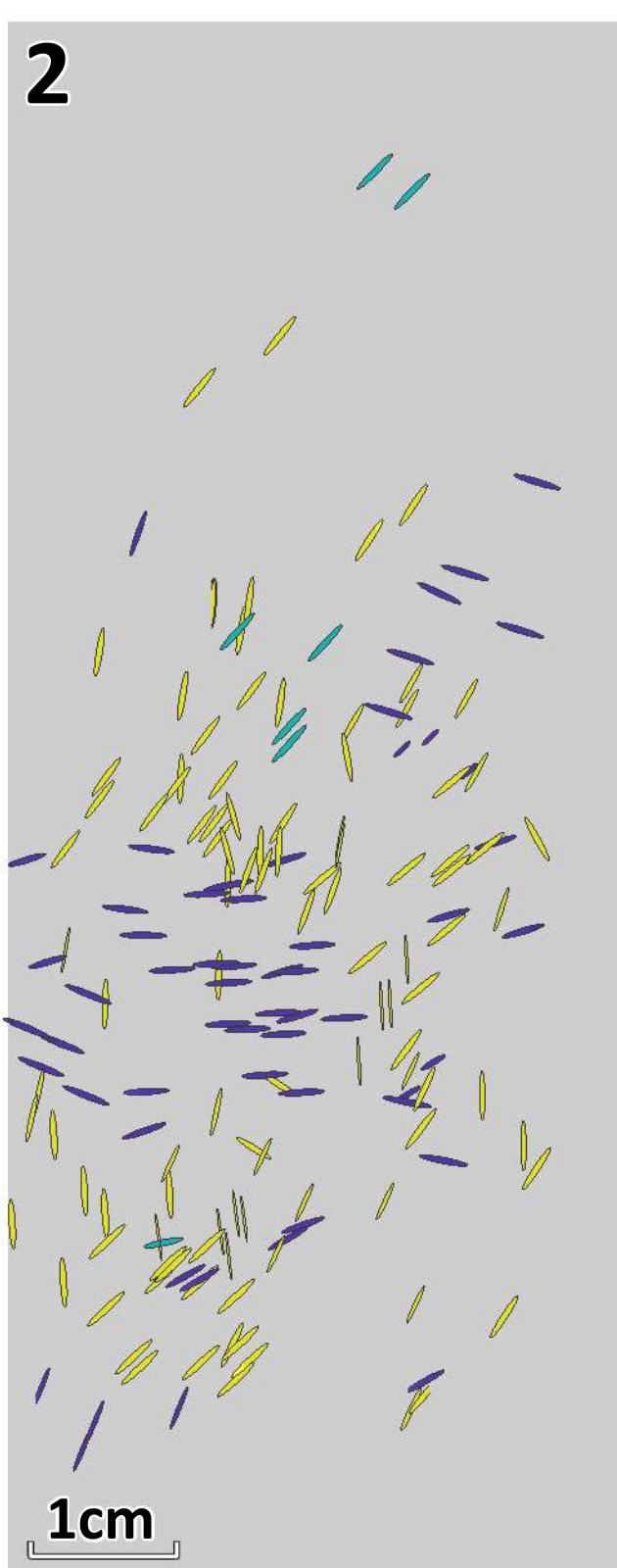
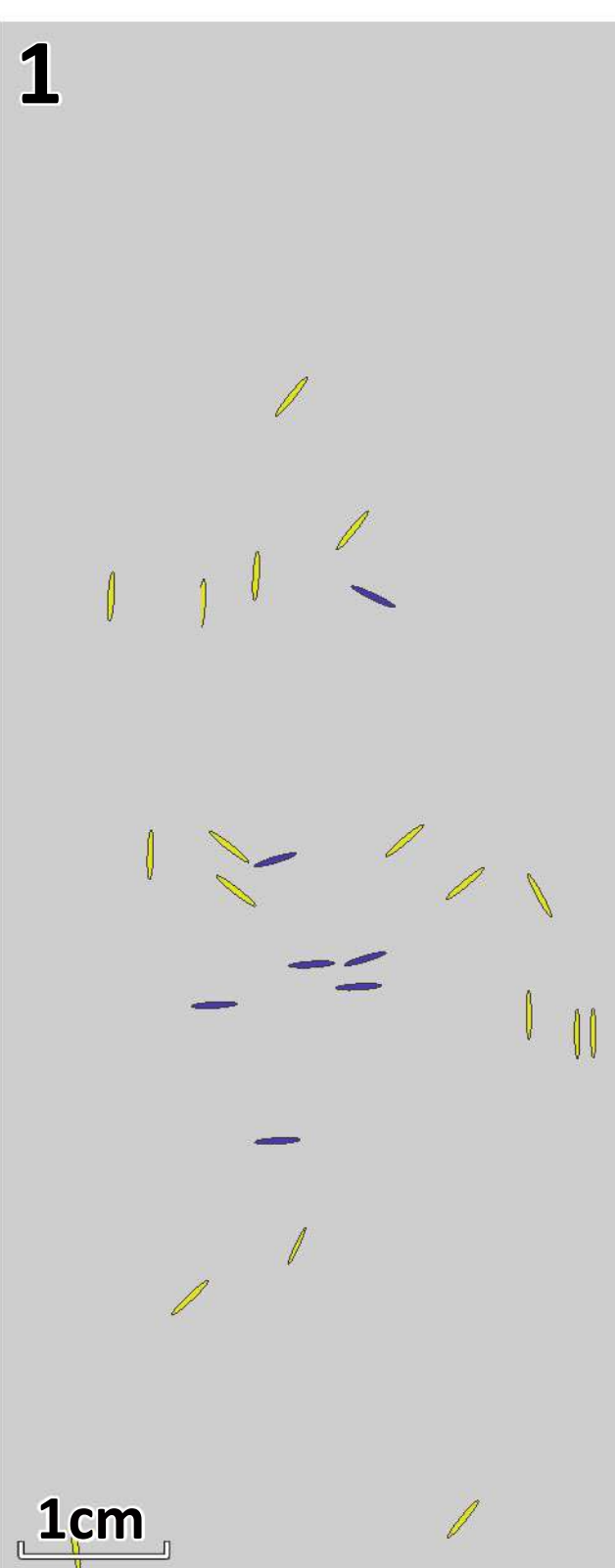
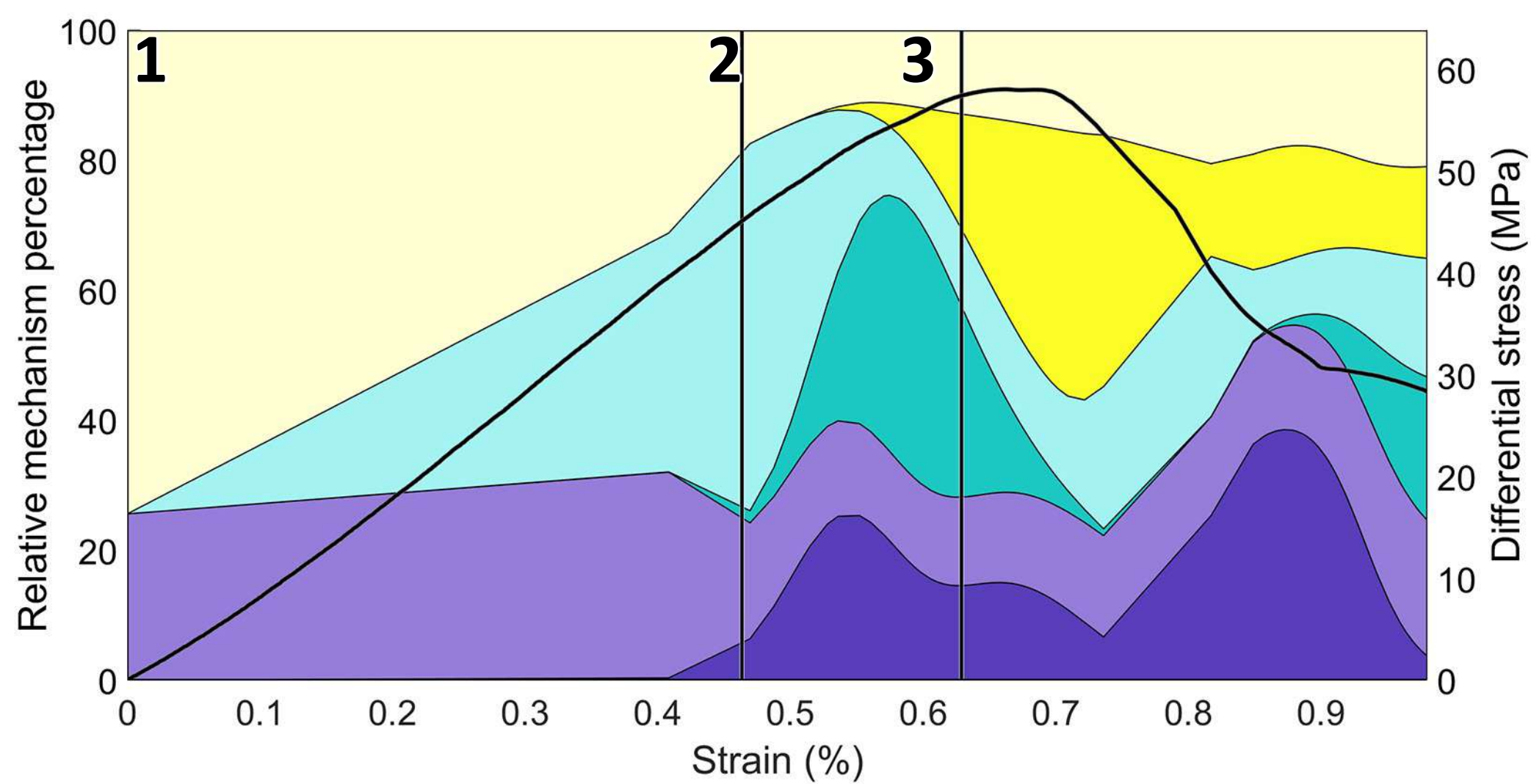
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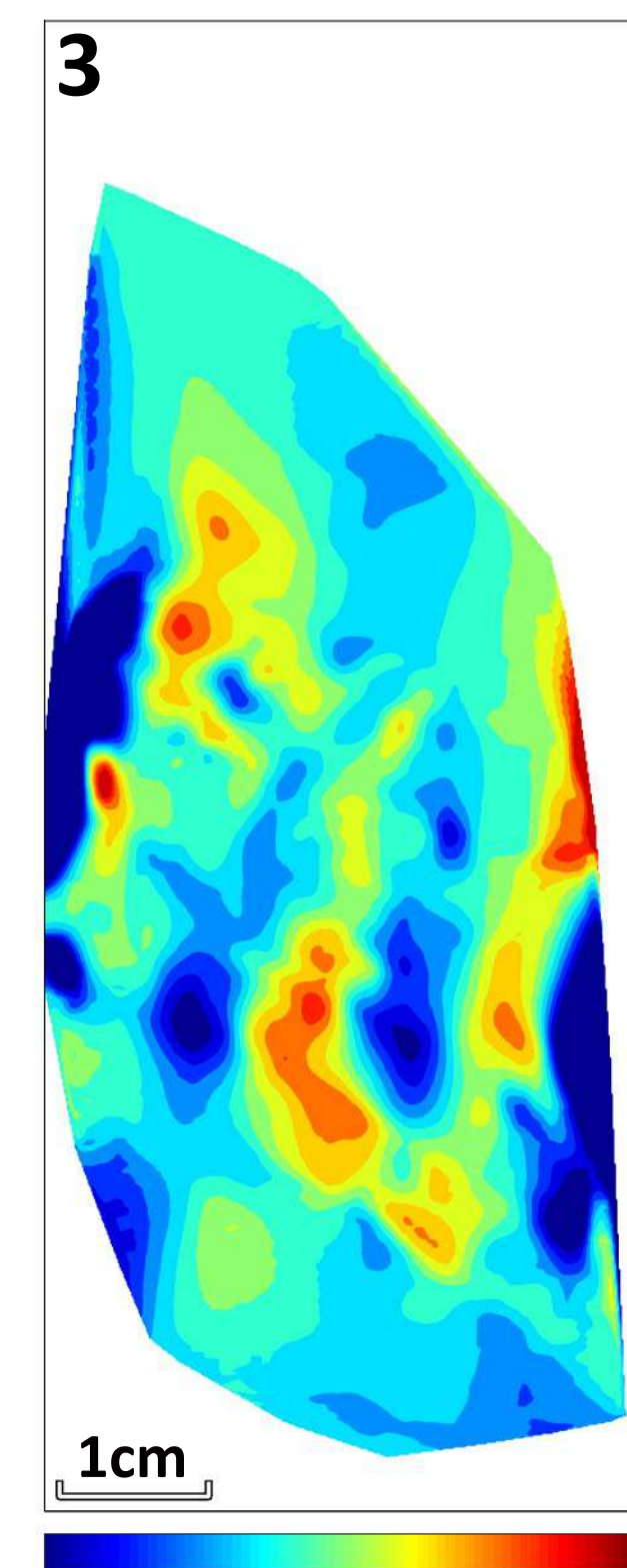
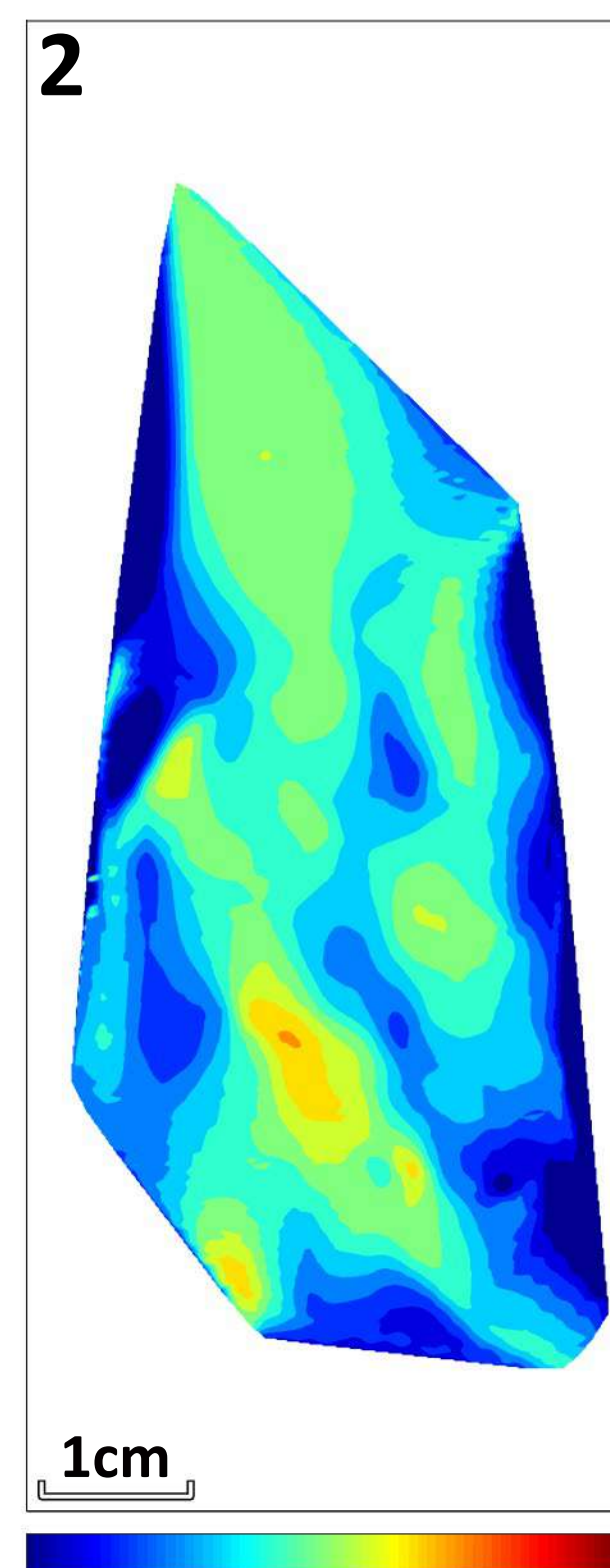
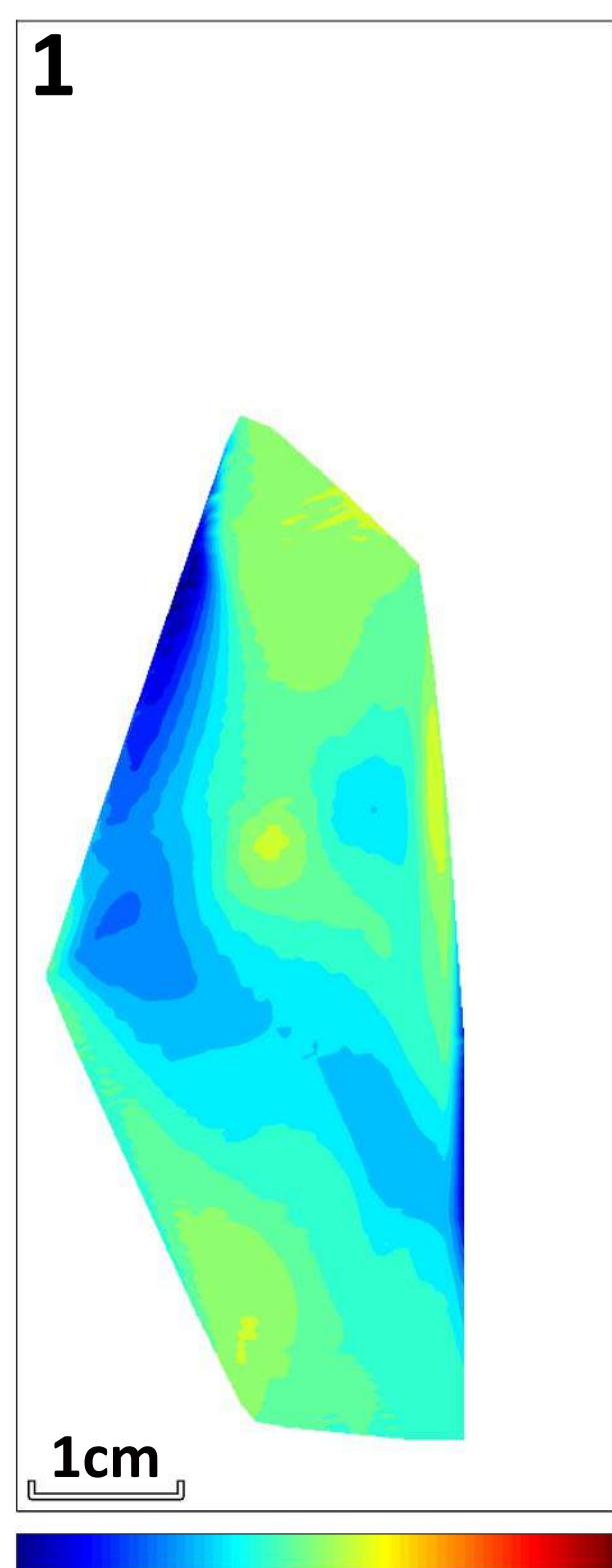
Darley Dale Sandstone at 5 MPa

a



■ T-type ■ S-type ■ C-type — D. stress
■ High amplitude ■ Low amplitude

b



Compaction

Dilation

Compaction

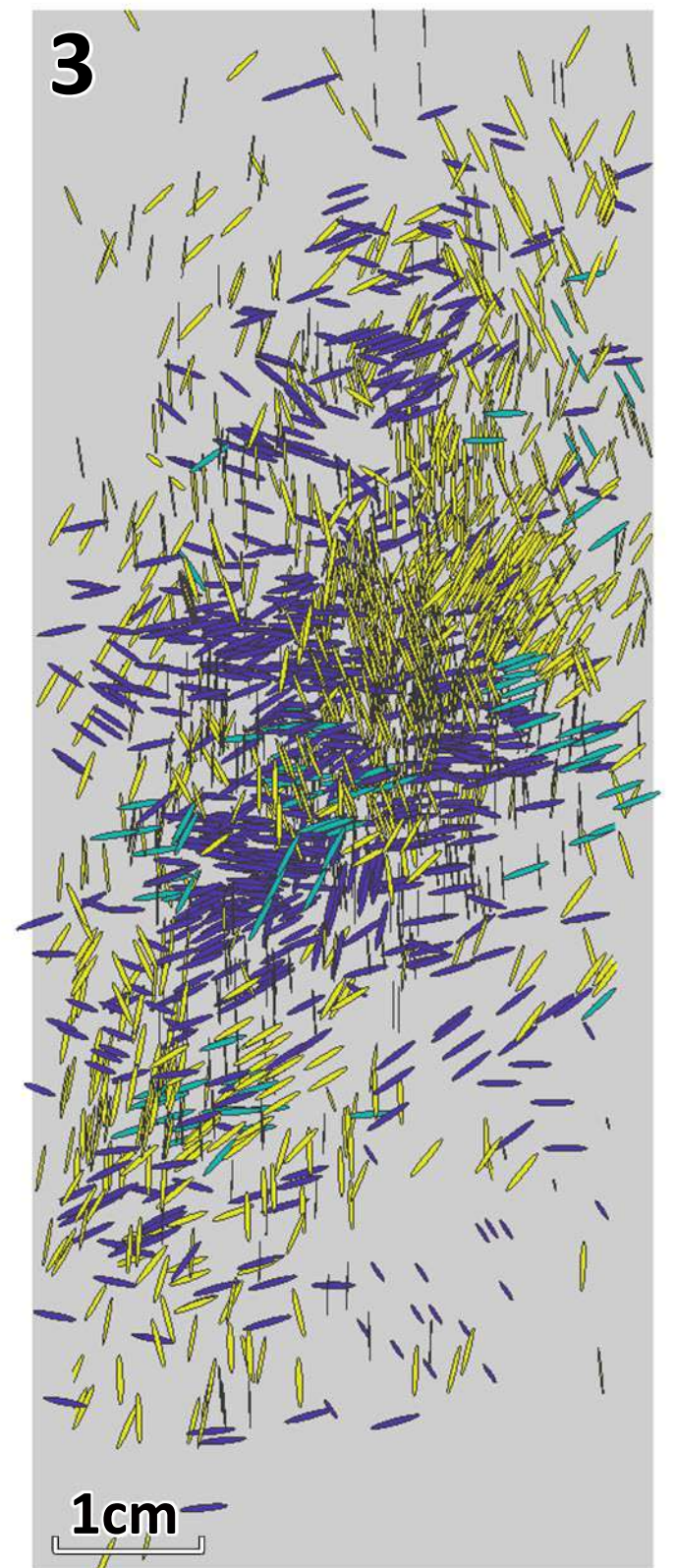
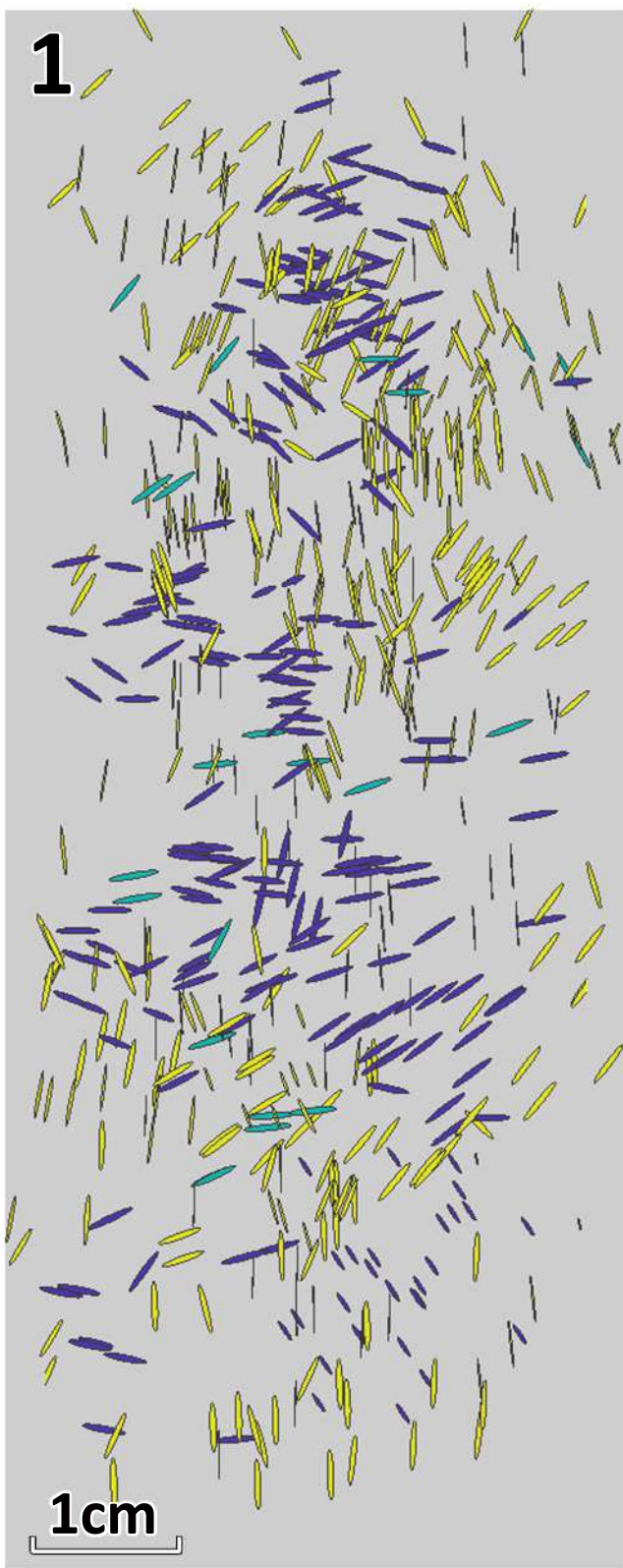
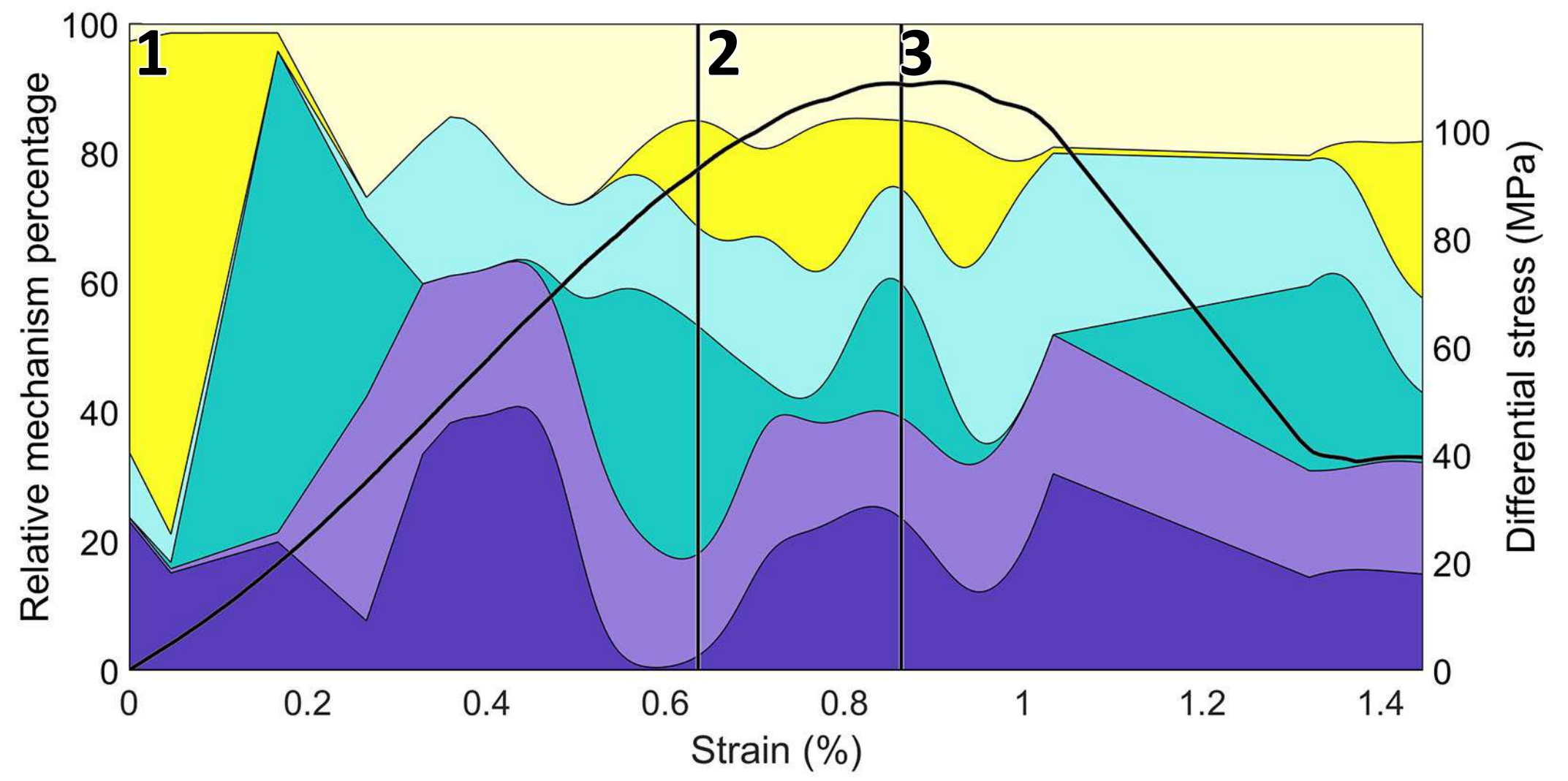
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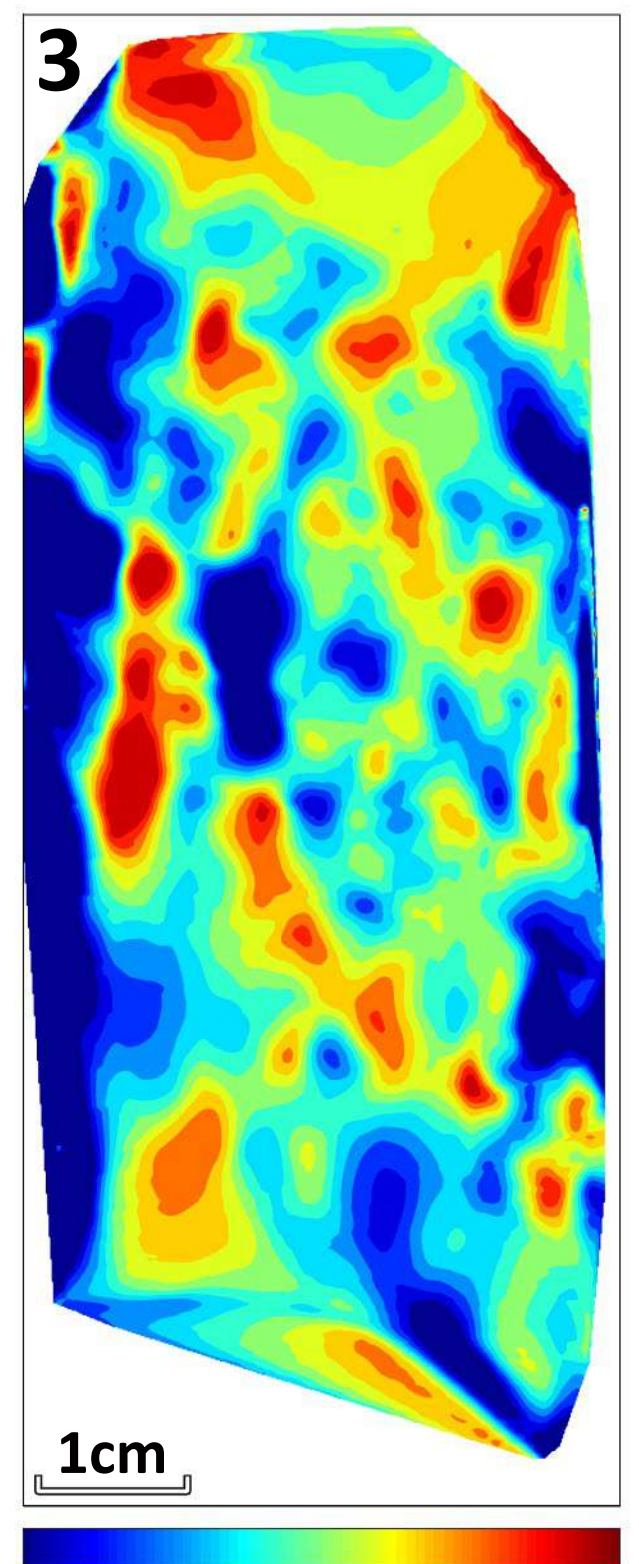
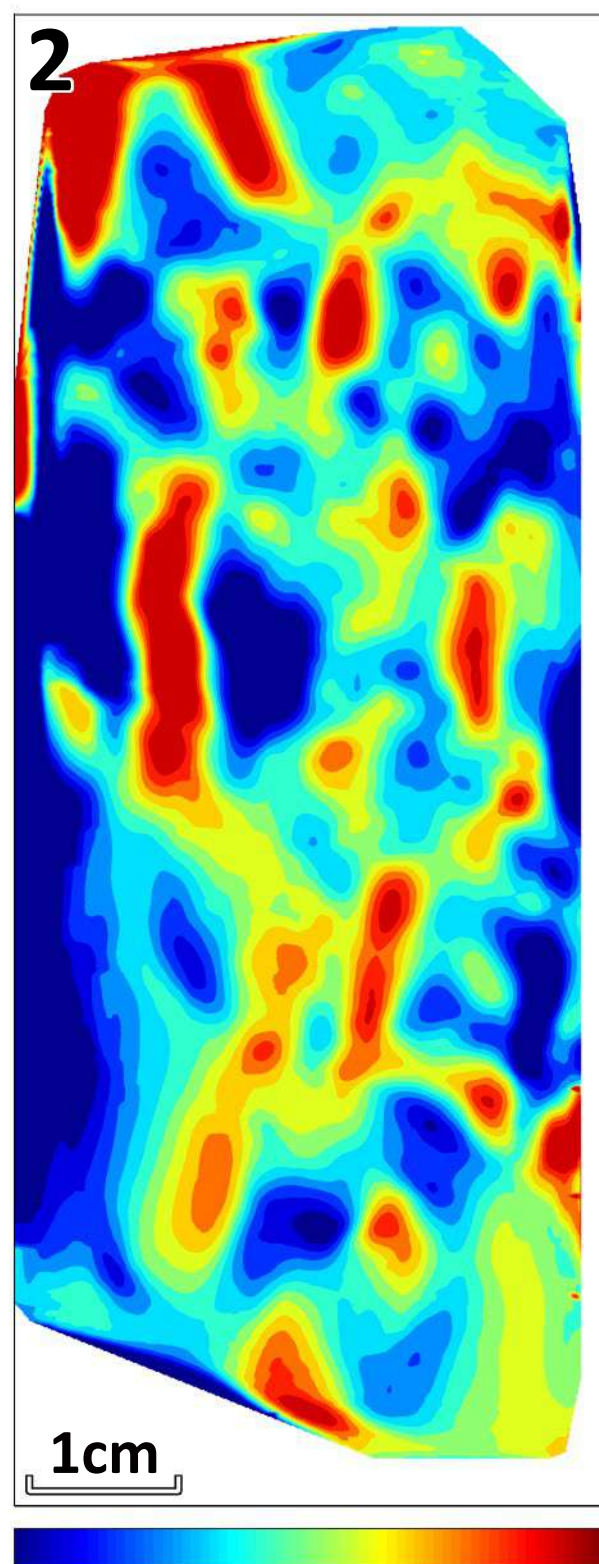
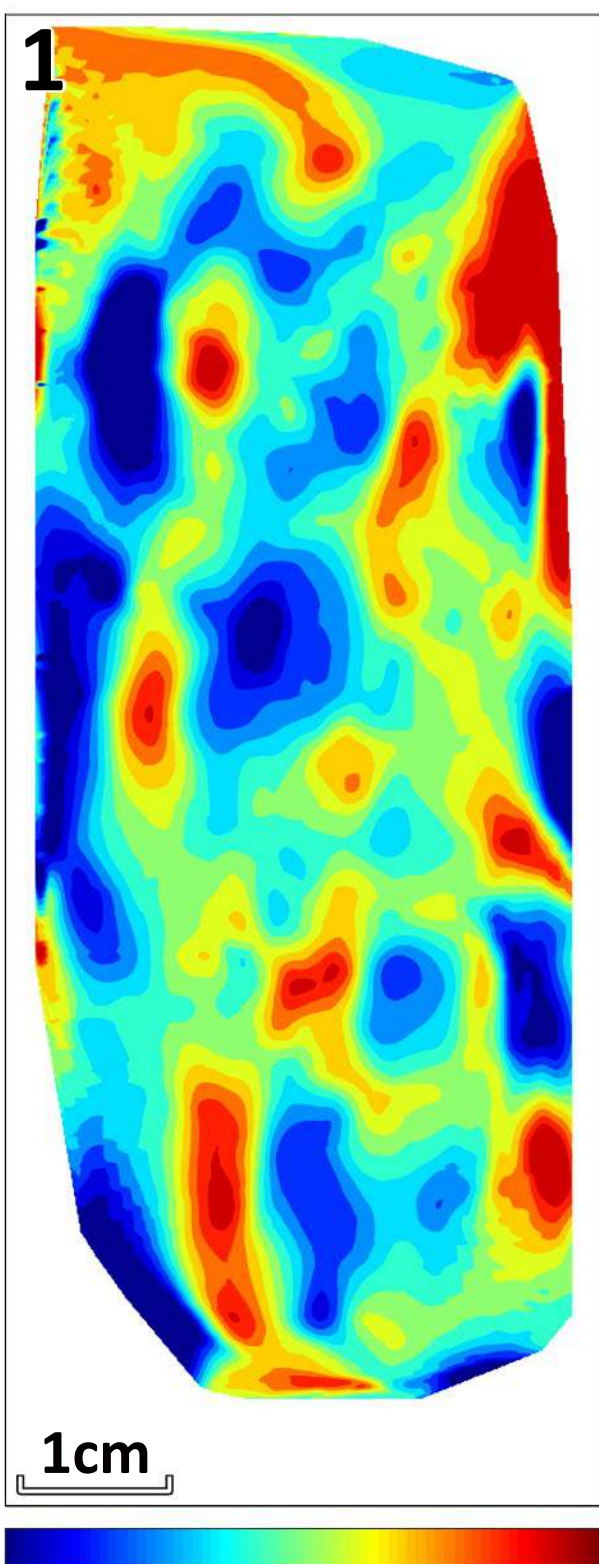
Darley Dale Sandstone at 10 MPa

a



Legend for Figure a:
Yellow: T-type Teal: S-type Purple: C-type Black line: D. stress
Grey: High amplitude Dark grey: Low amplitude

b



Compaction

Dilation

Compaction

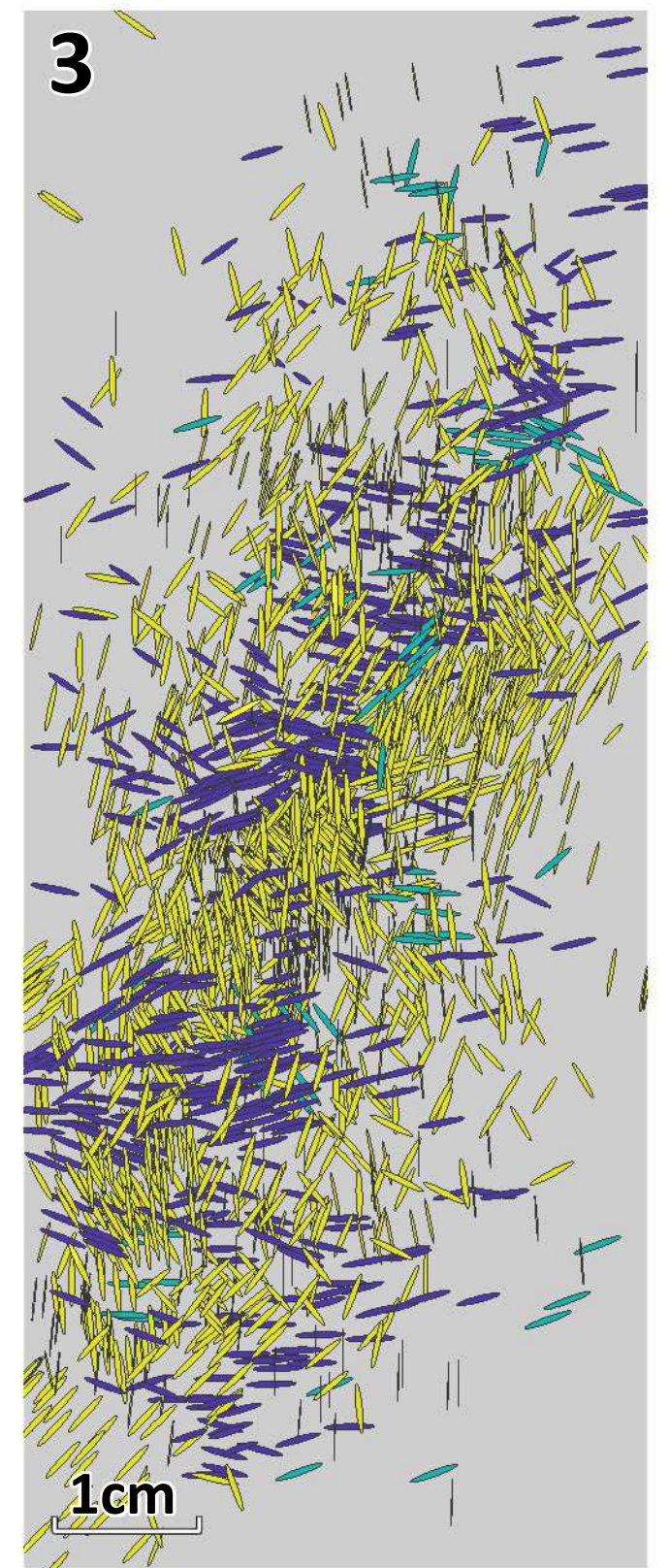
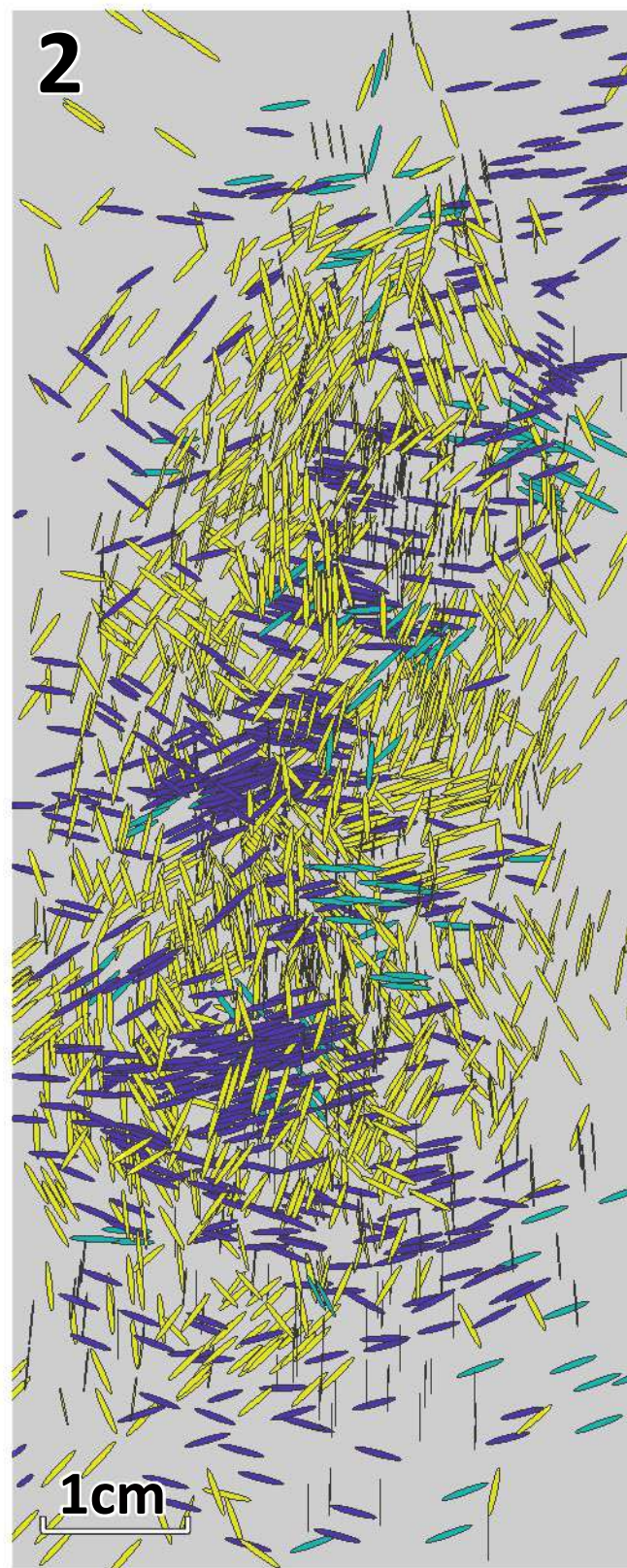
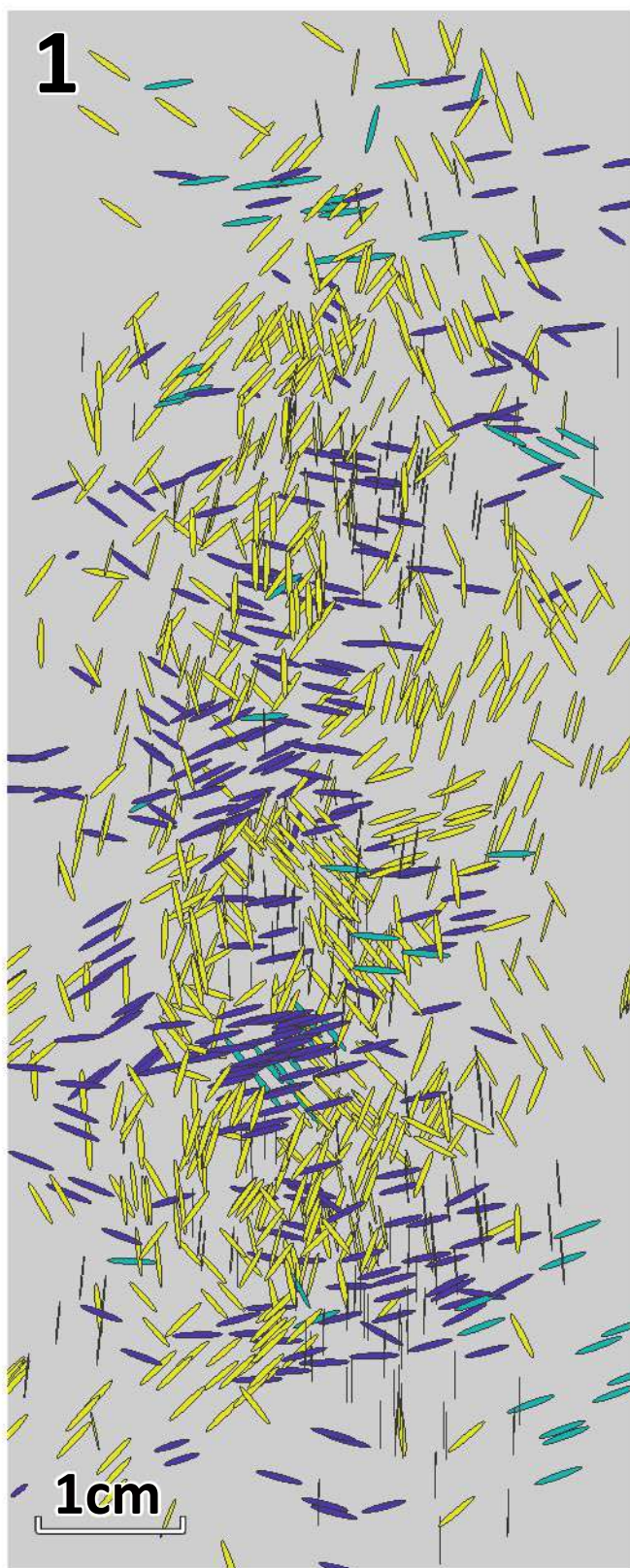
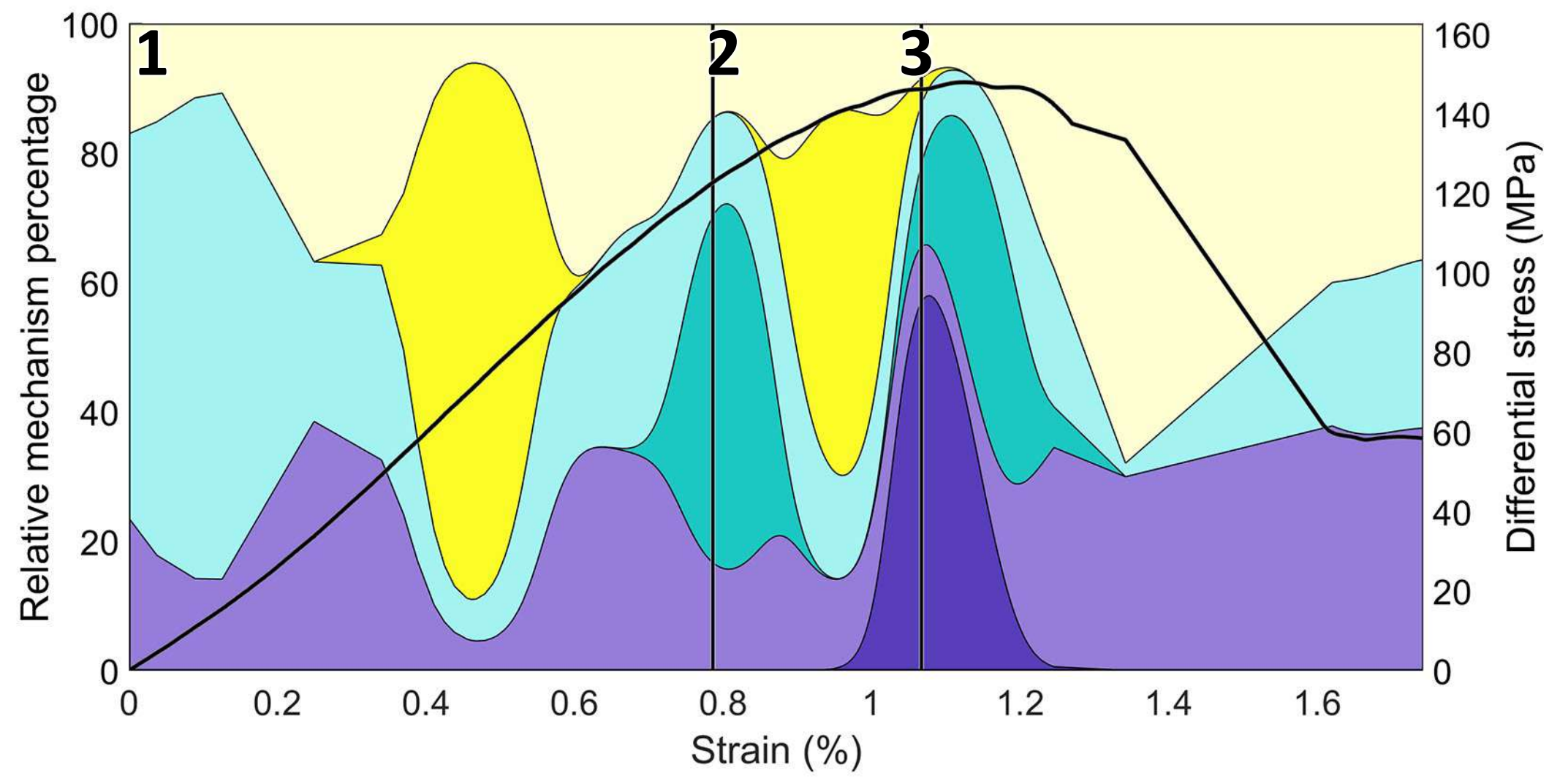
Dilation

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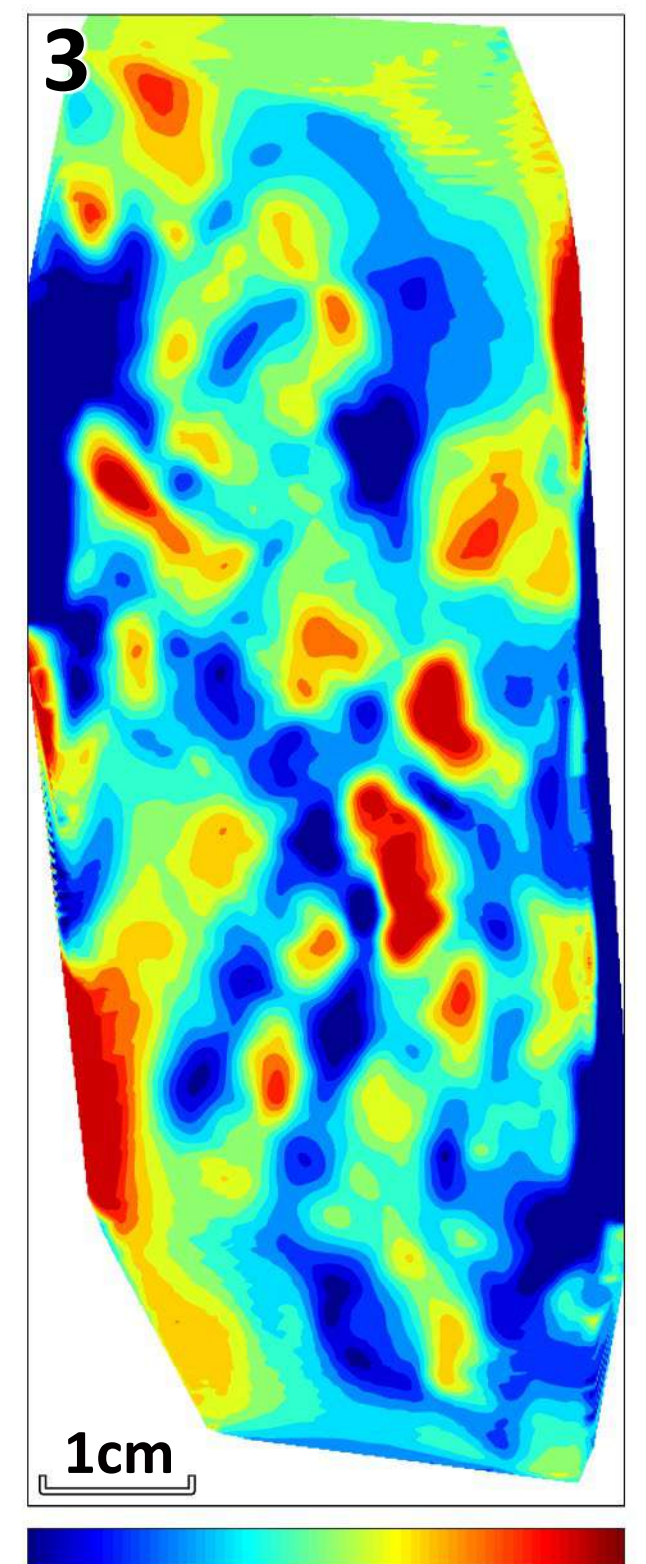
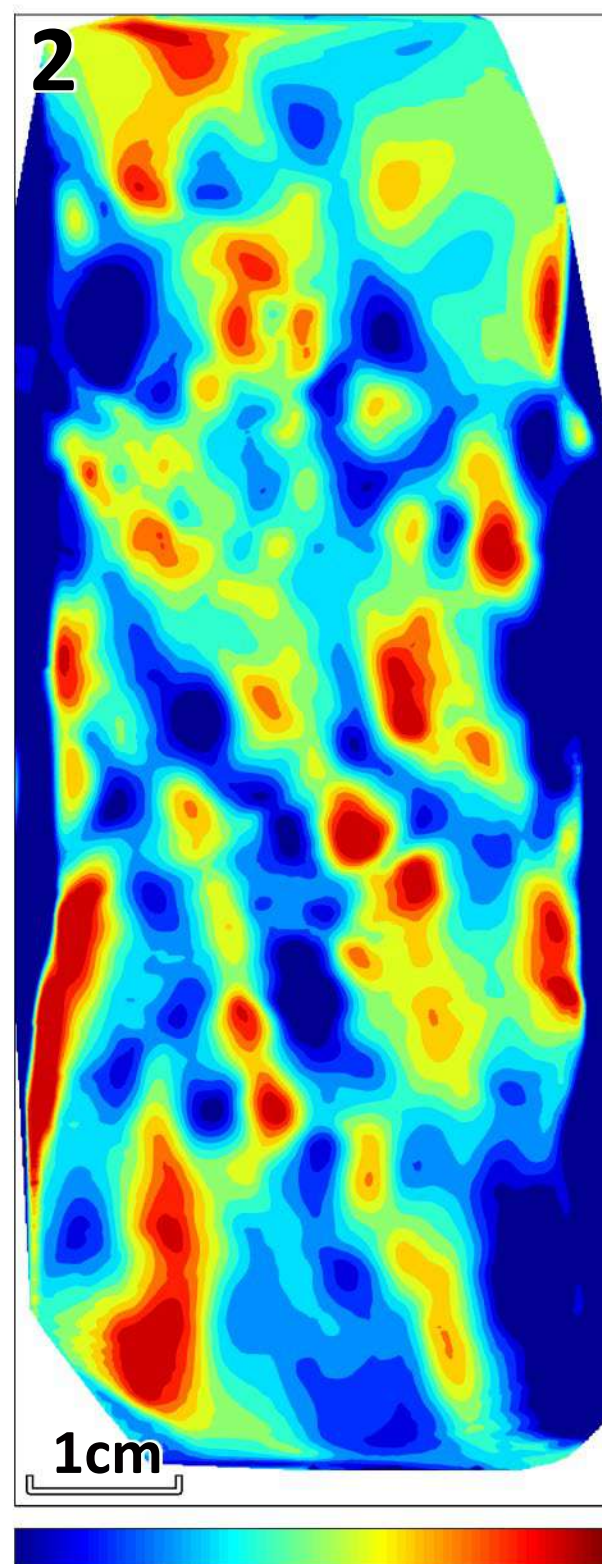
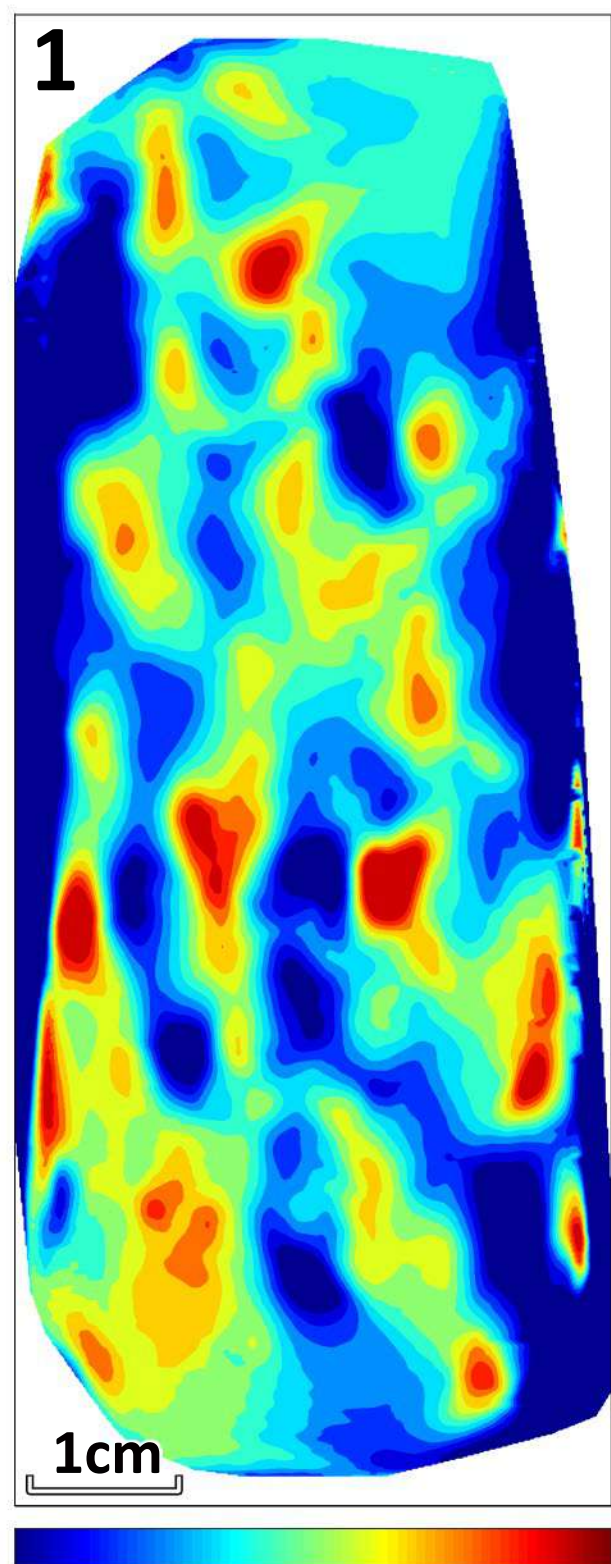
Darley Dale Sandstone at 20 MPa

a



■ T-type ■ S-type ■ C-type — D. stress
■ High amplitude ■ Low amplitude

b



Compaction

Dilation

Compaction

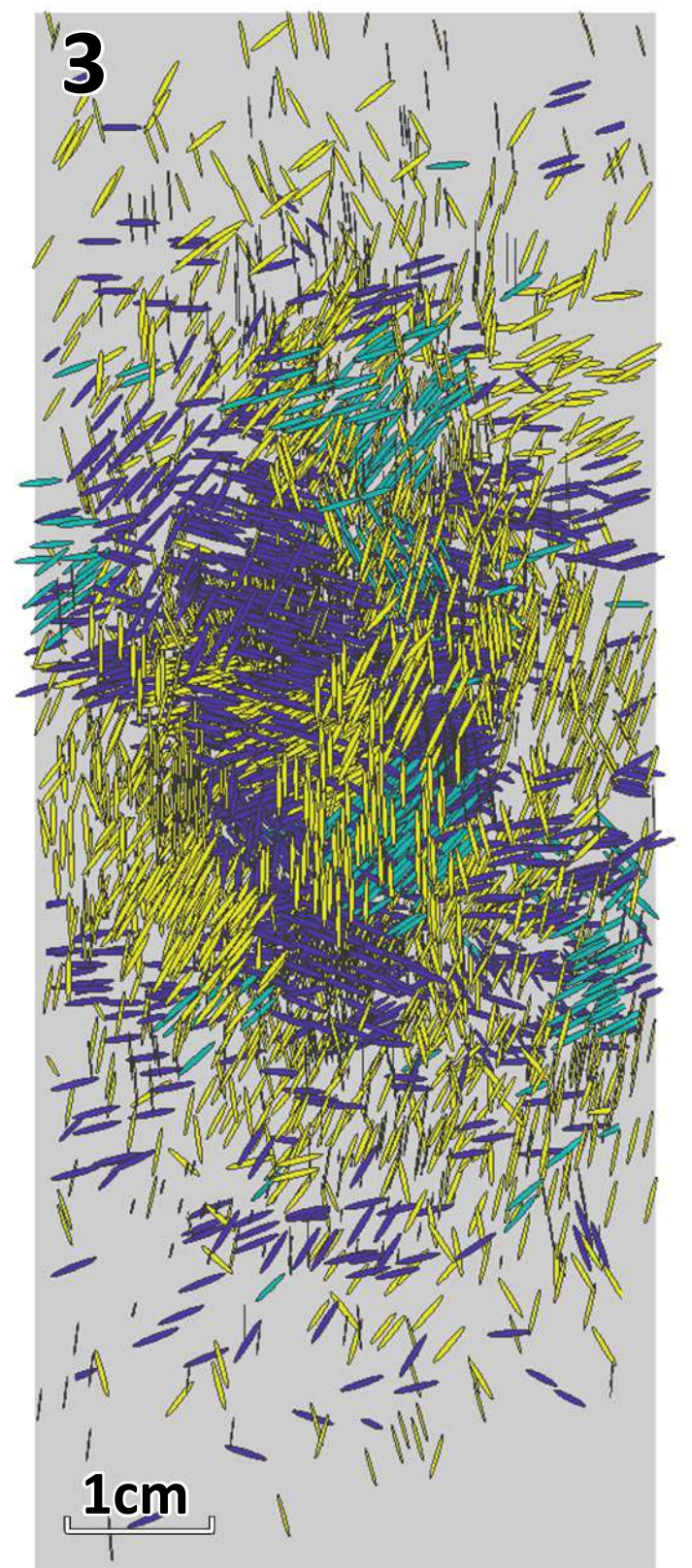
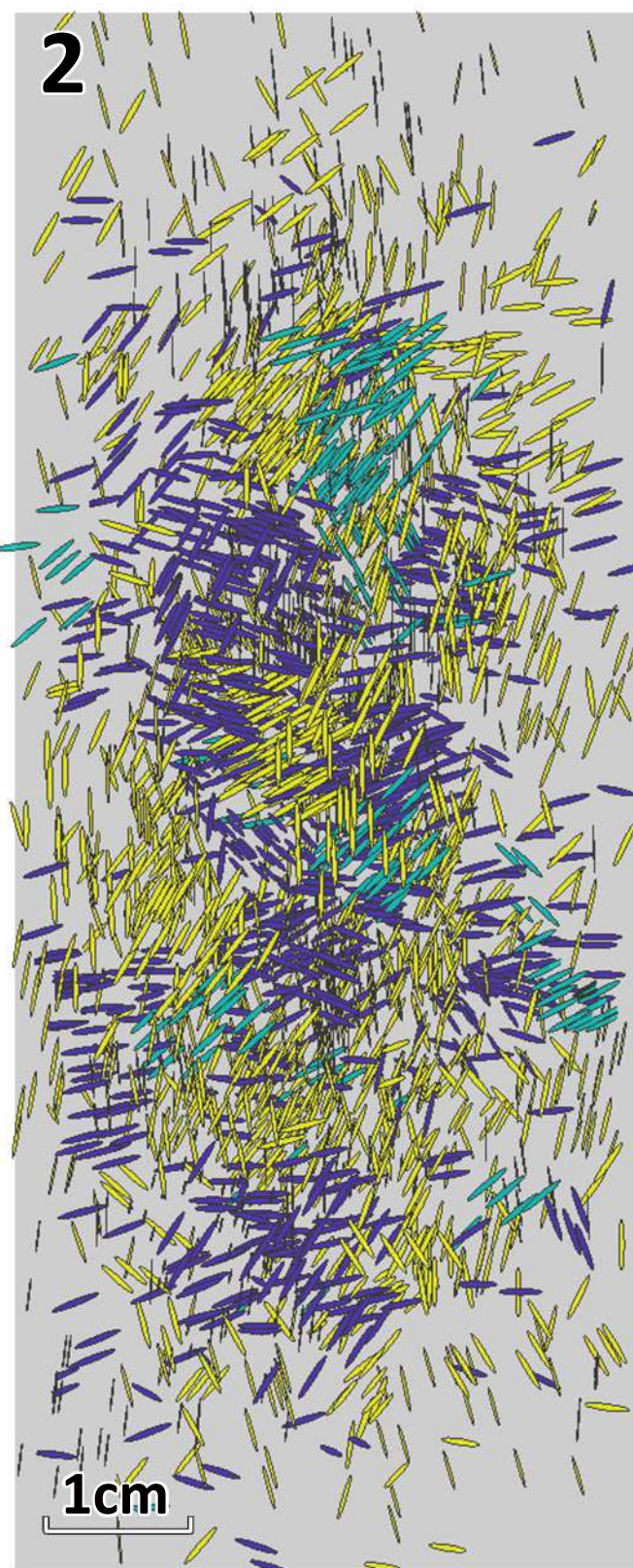
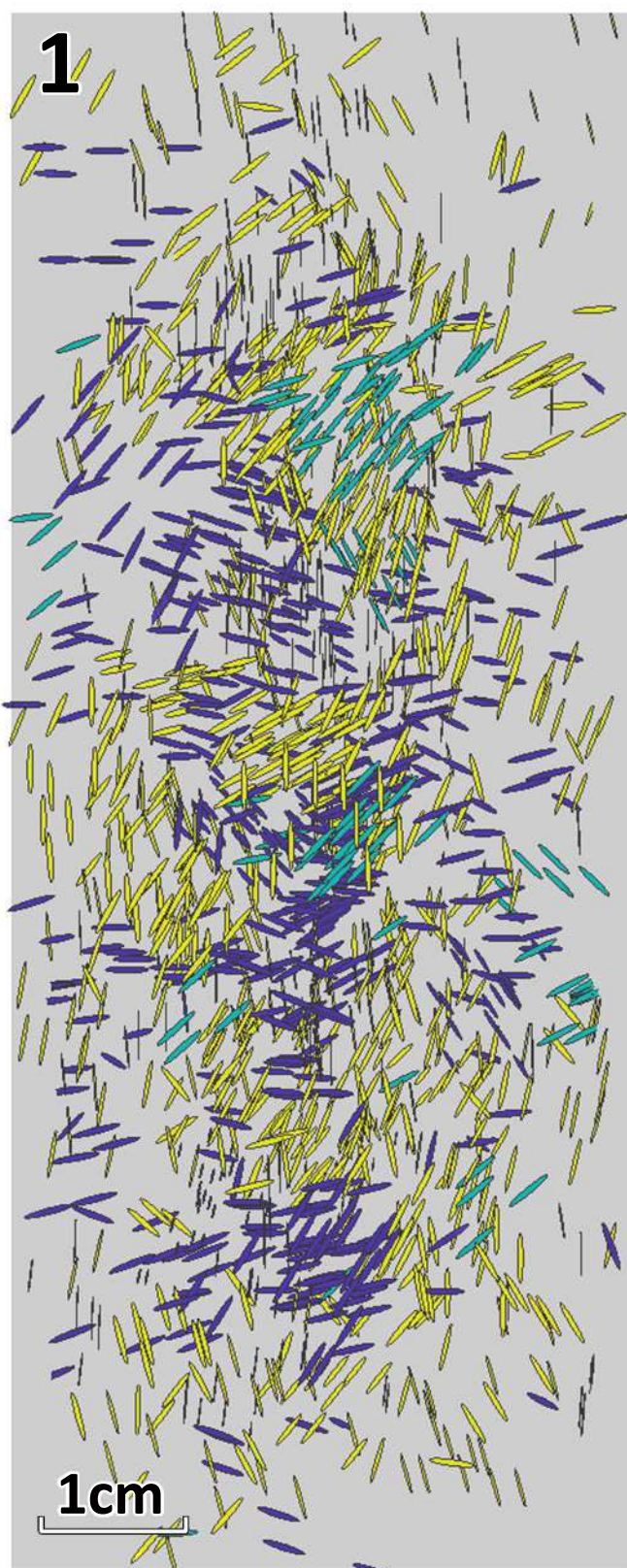
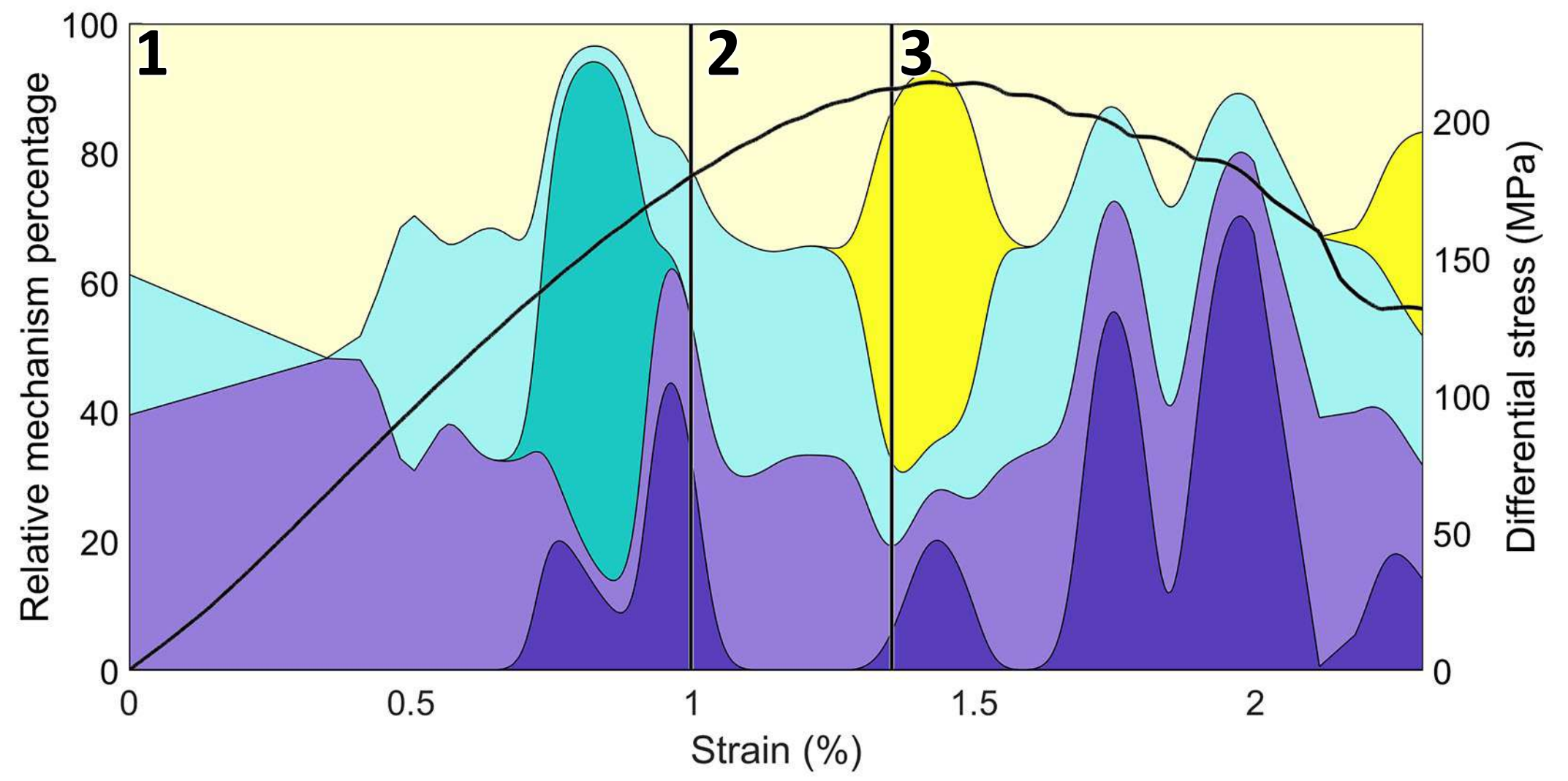
Dilation

Compaction

Dilation

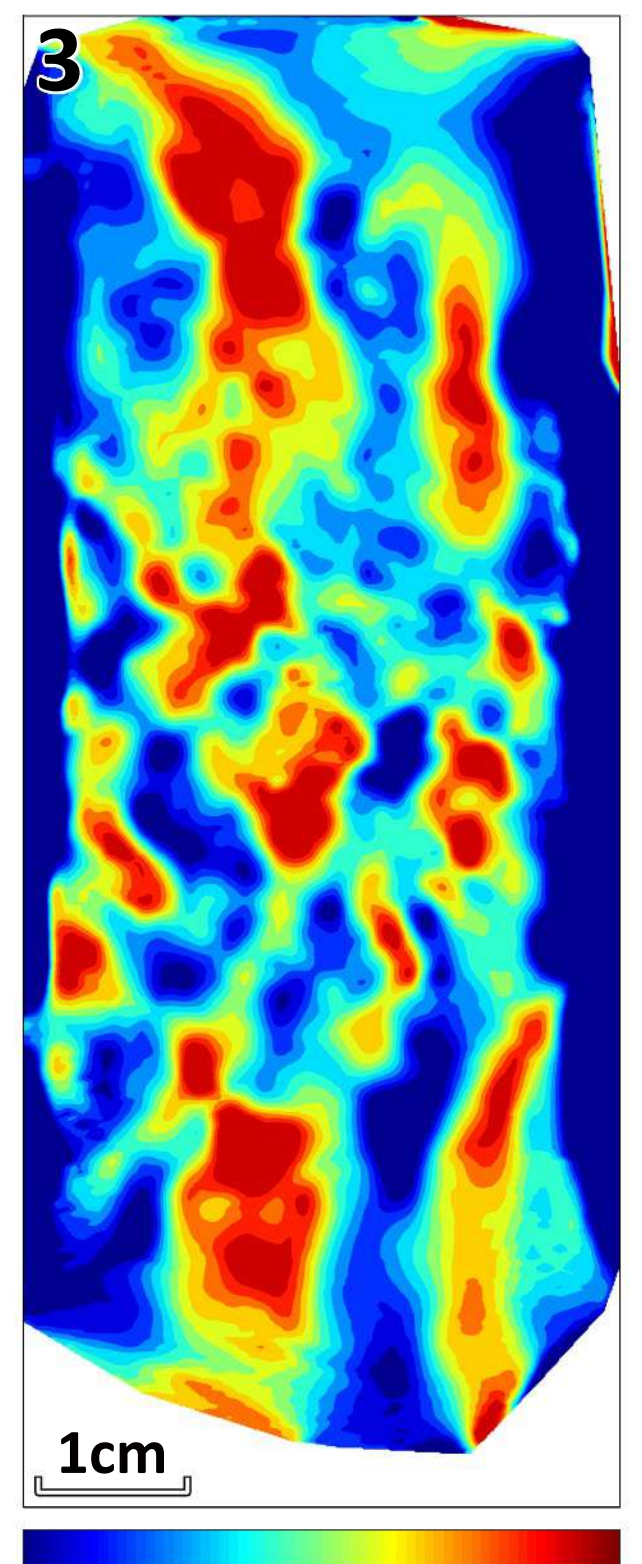
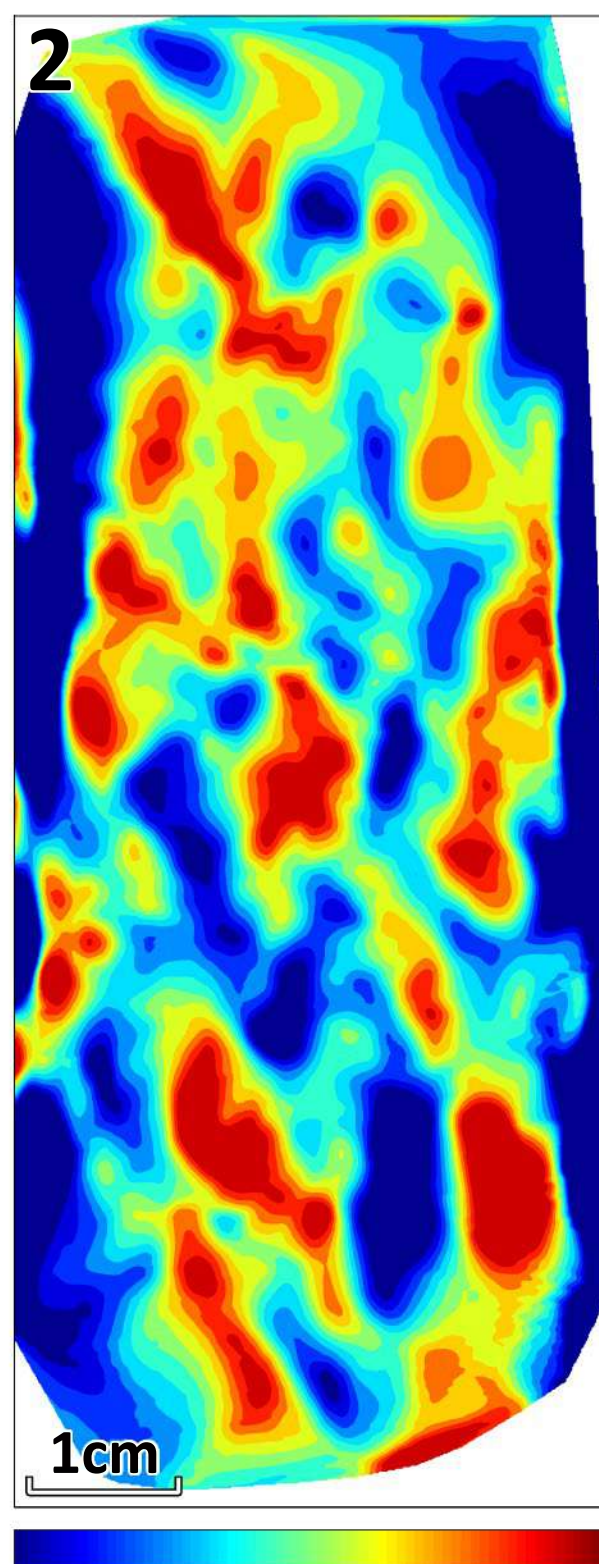
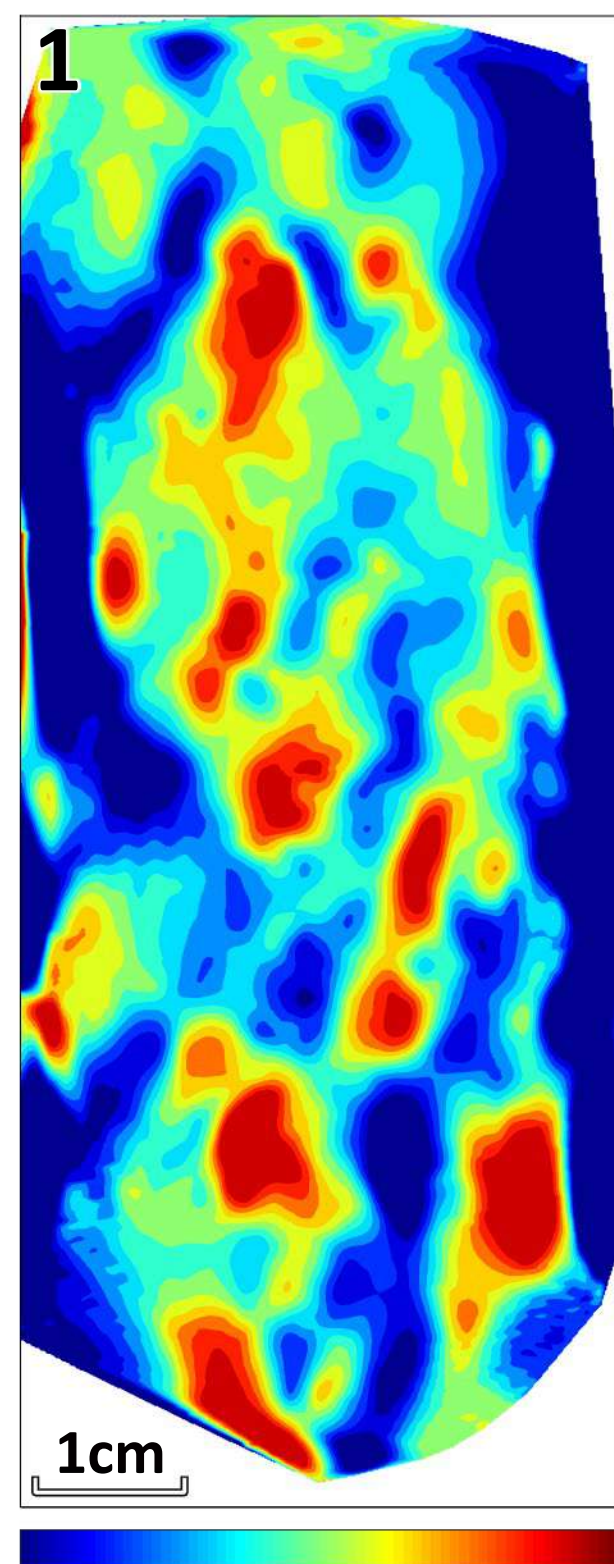
Darley Dale Sandstone at 40 MPa

a



— T-type — S-type — C-type — D. stress
— High amplitude — Low amplitude

b



Compaction

Dilation

Compaction

Dilation

Compaction

Dilation