

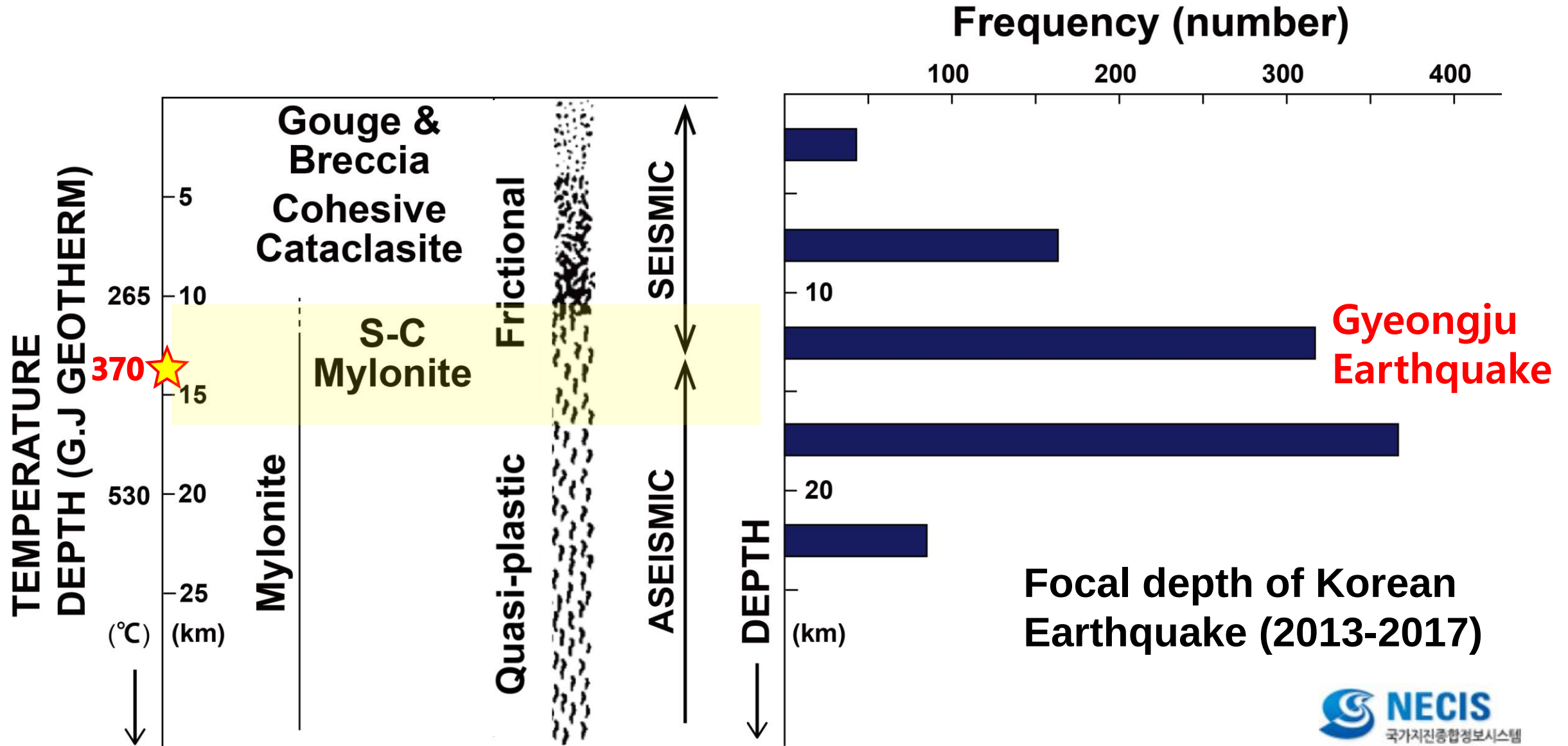
Seismogenesis under brittle-plastic transition condition in the Yecheon shear zone, South Korea

Jae Hoon Kim*, Jin-Han Ree



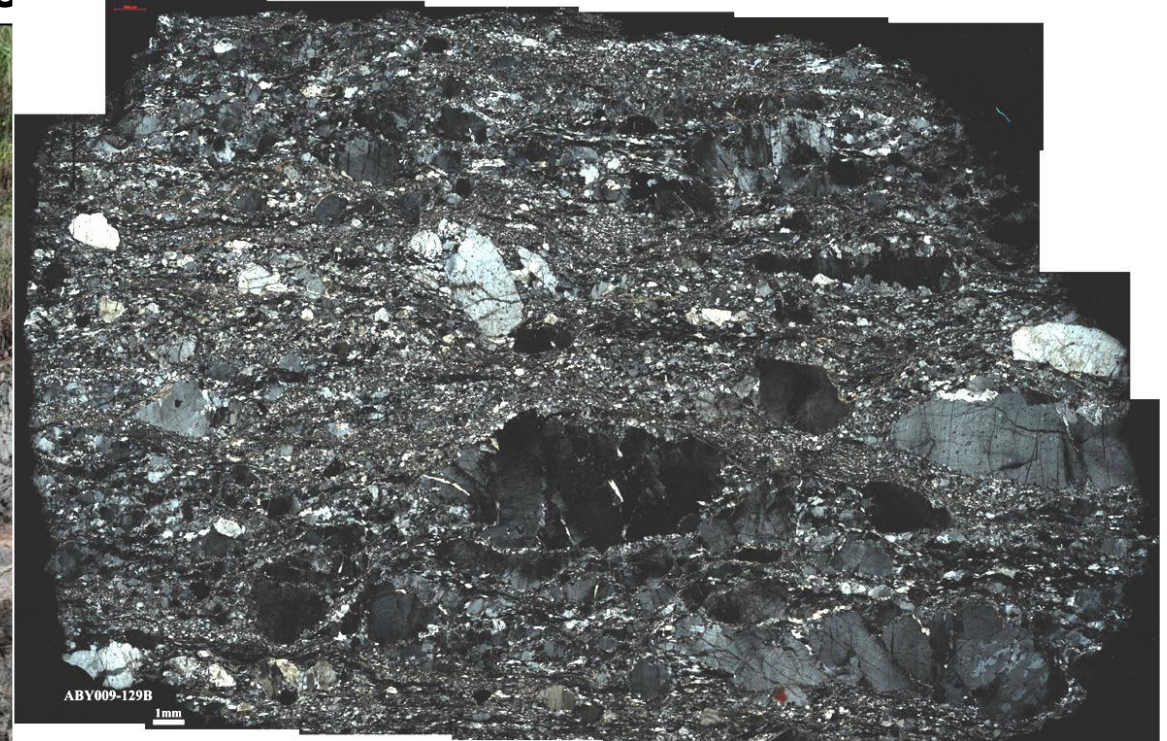
*Questions to: apokjh@naver.com

Motivation: Gyeongju Earthquake



Yecheon shear zone

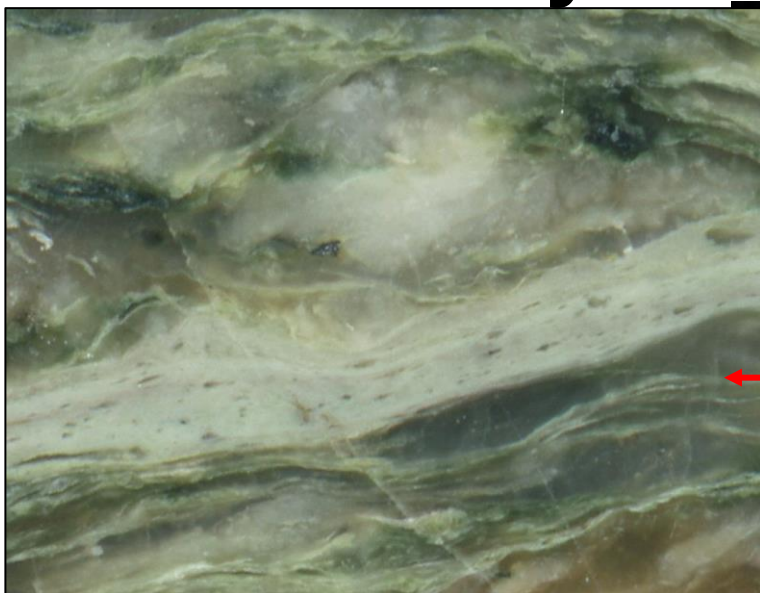
/ Metasedimentary rock (nF)



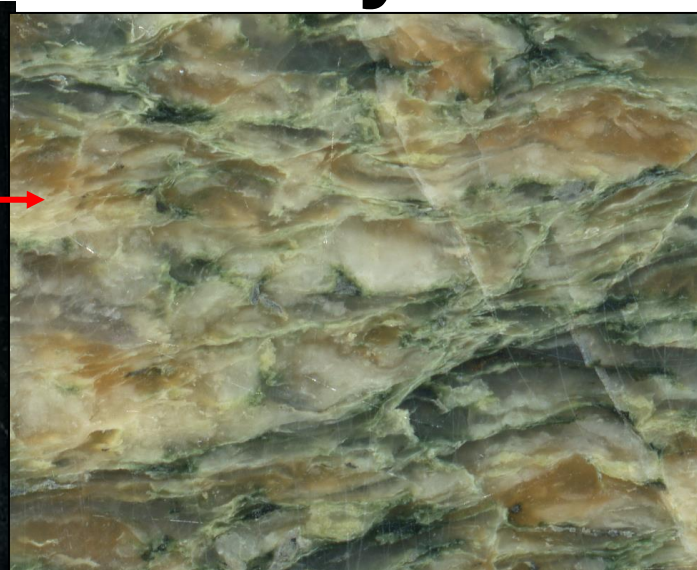
Temperature estimation by two-feldspar geothermometry: **330–360°C**

→ Quartz: plastic
Feldspar: brittle

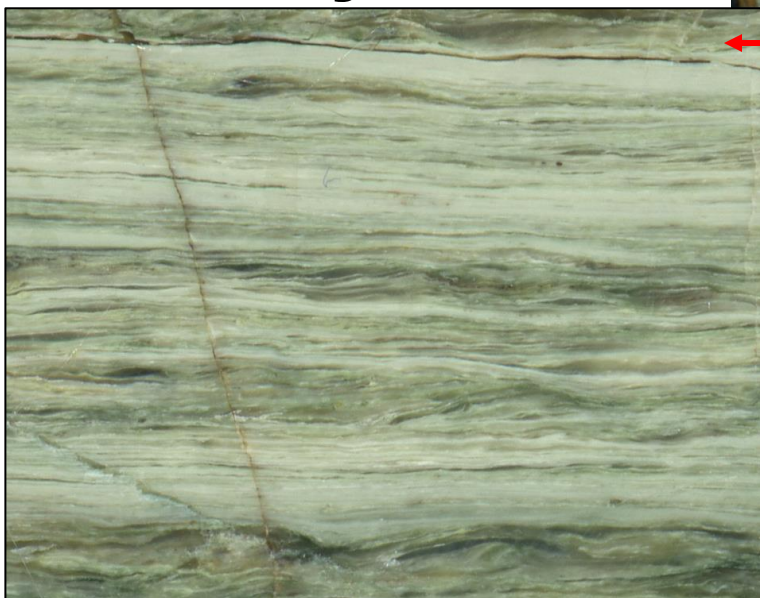
Greenish layer



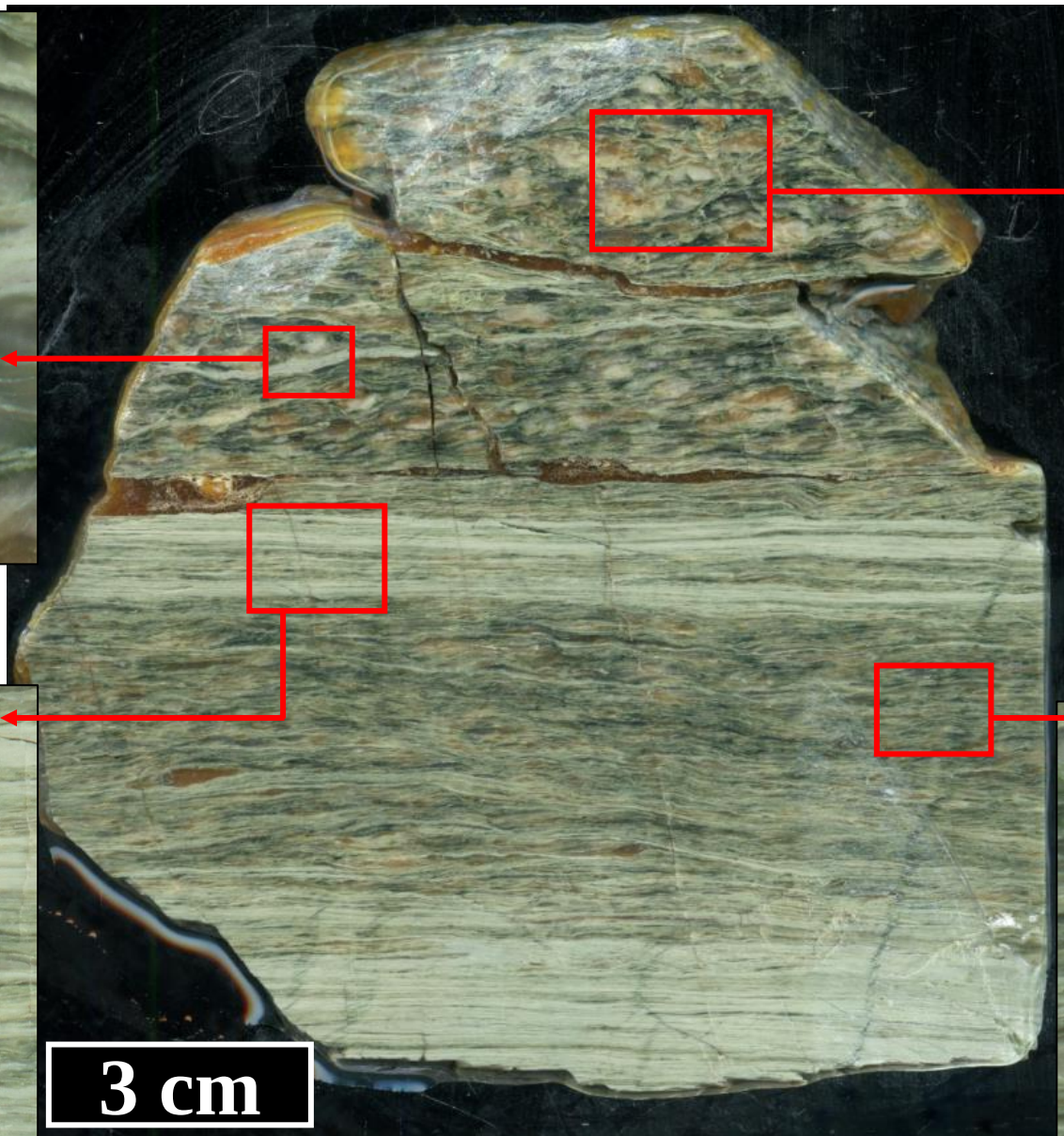
Protomylonite



Ultramylonite

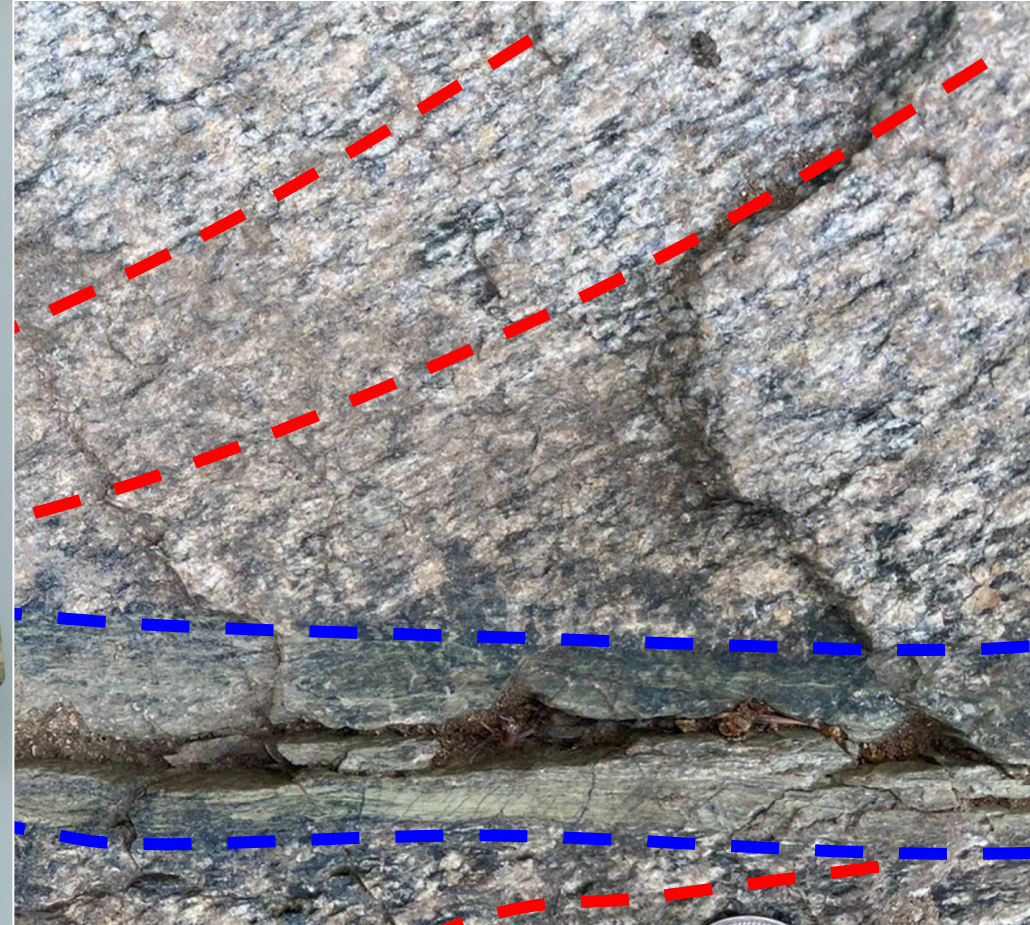


Mylonite



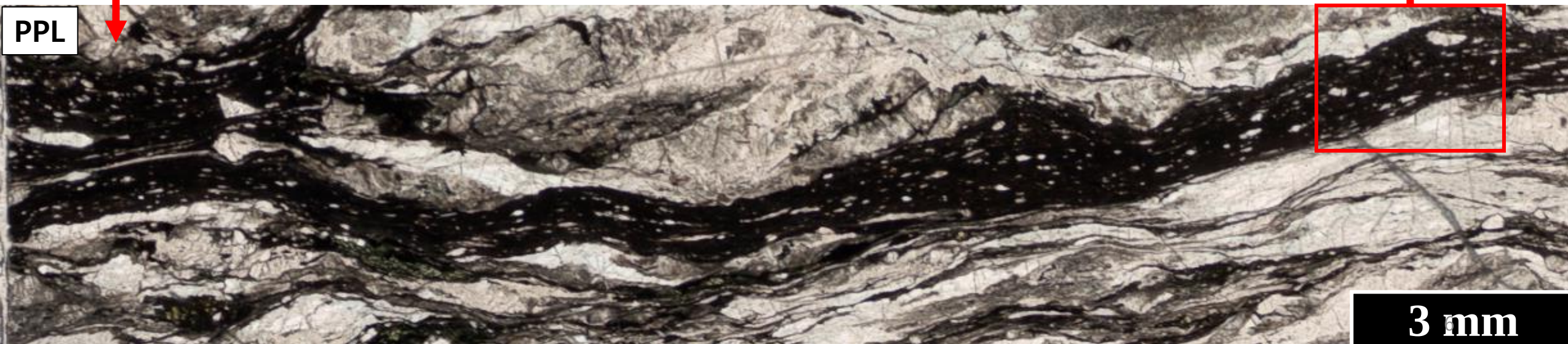
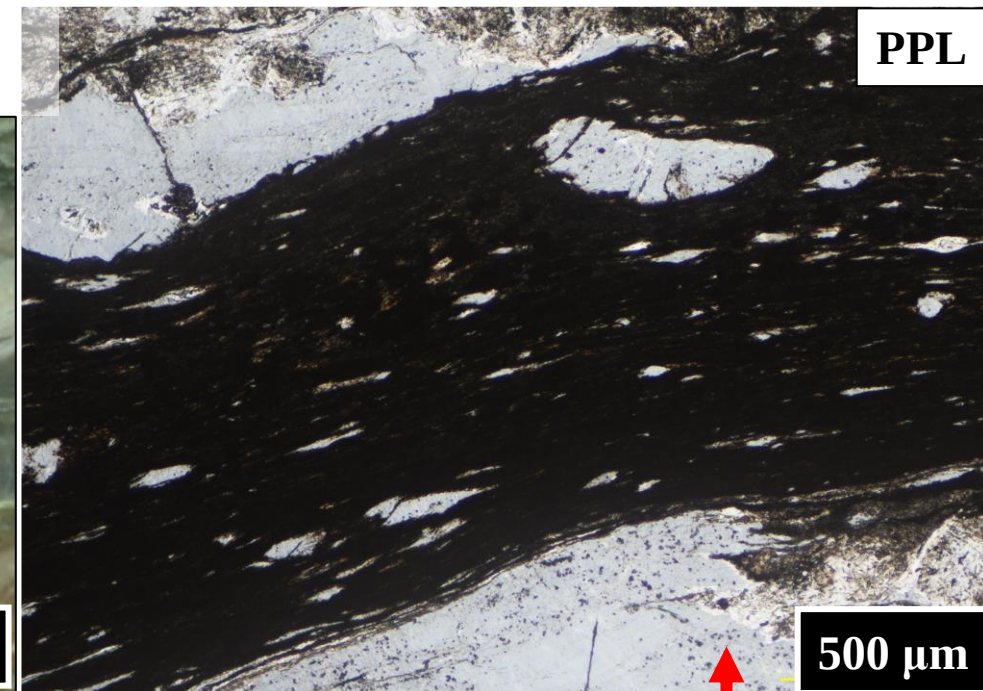
3 cm

Greenish layer (Thickness: 1 mm ~ 3 cm)

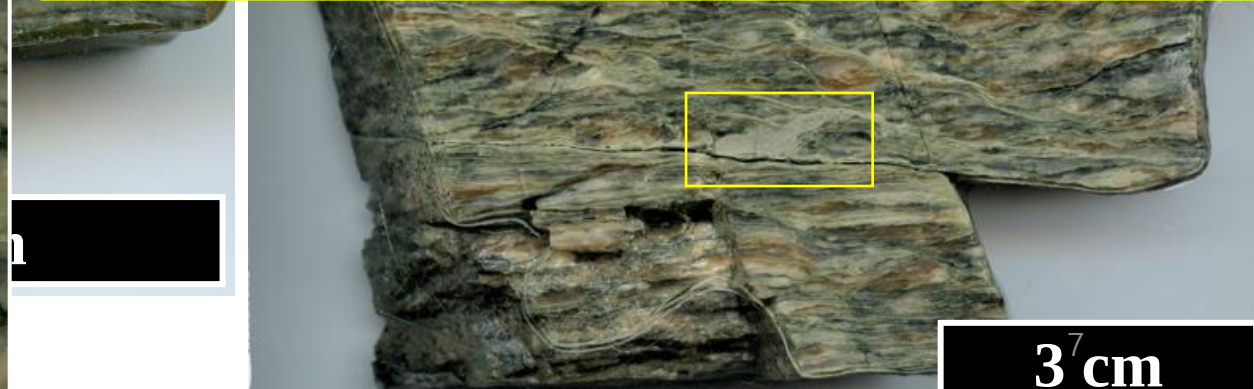
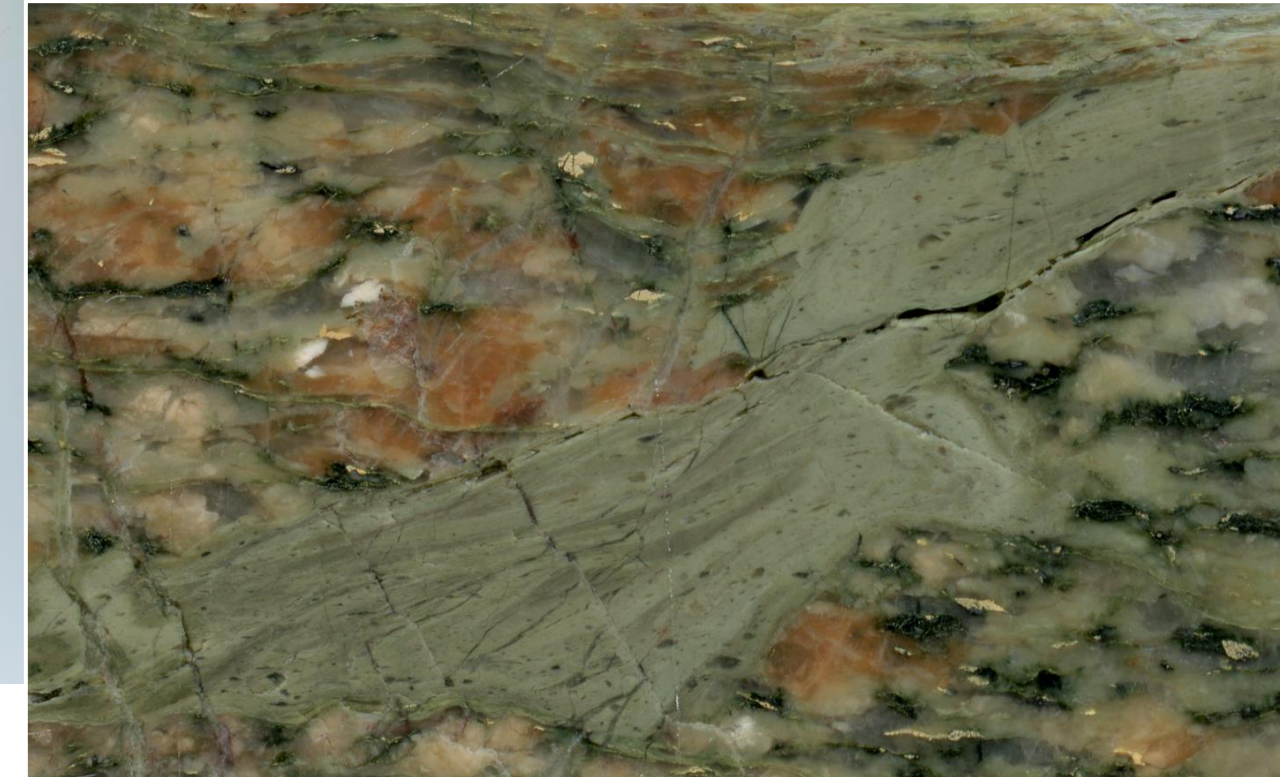
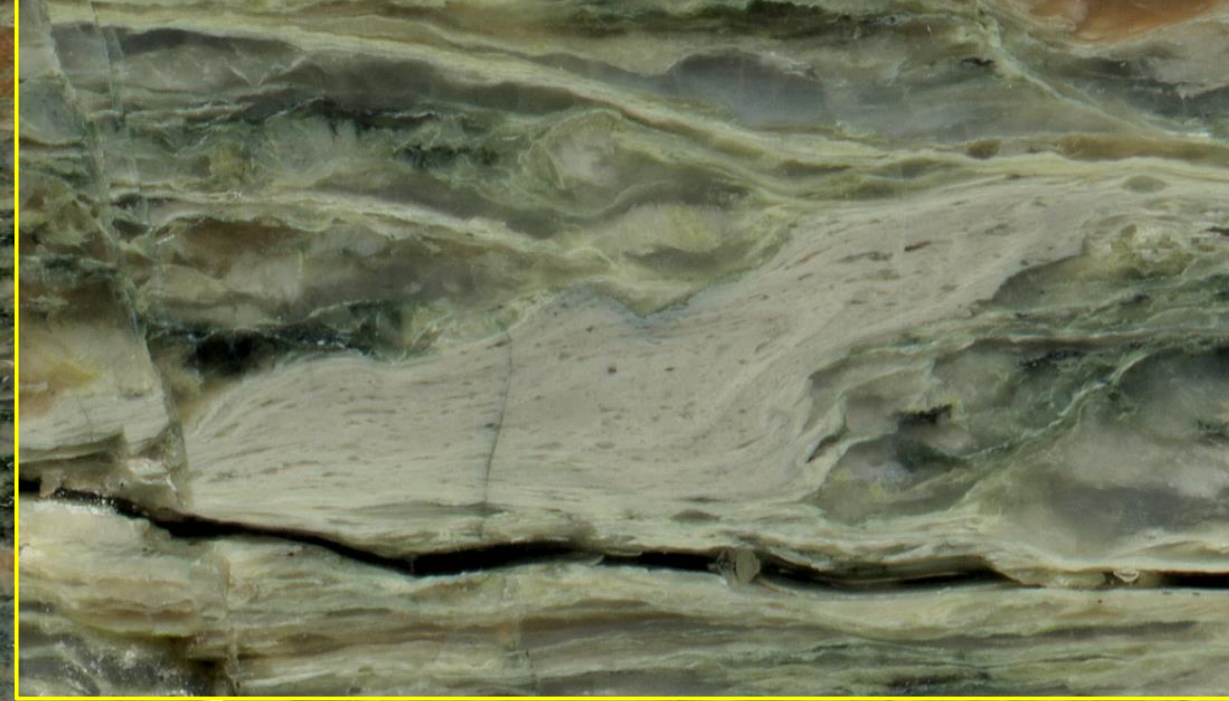
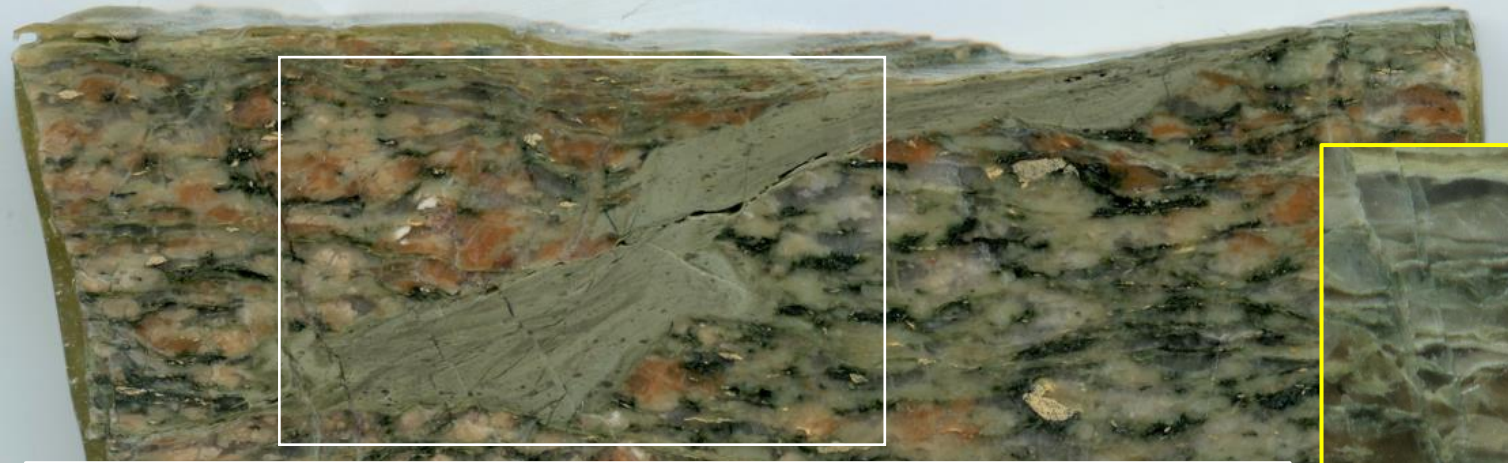


**Cross cutting
mylonitic foliation
at a low angle**

- Includes fragments of protomylonite (0.1–1 mm)



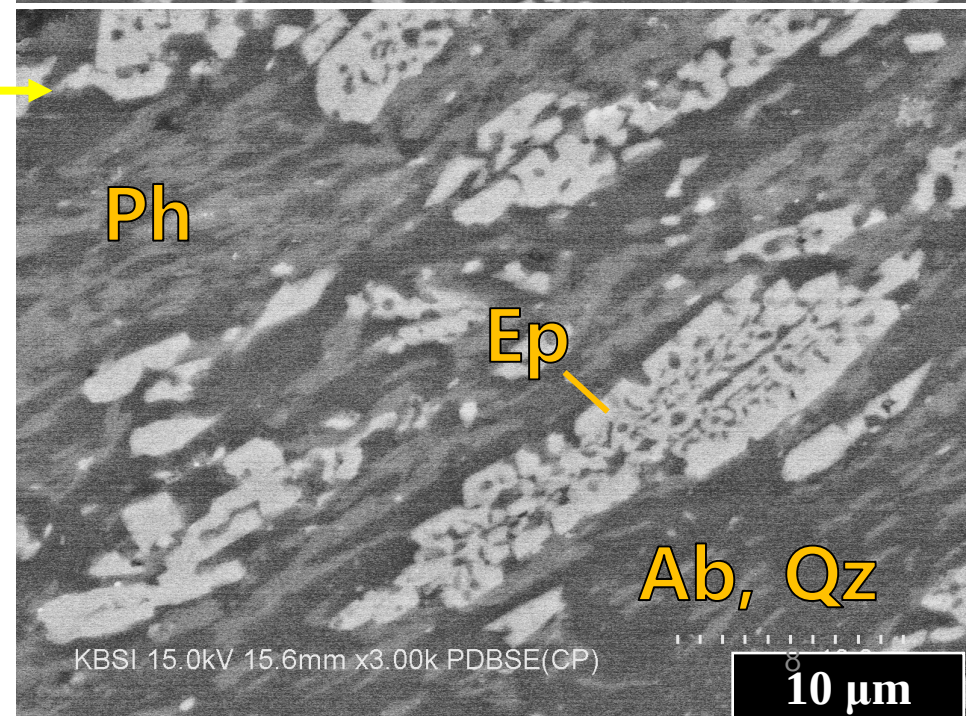
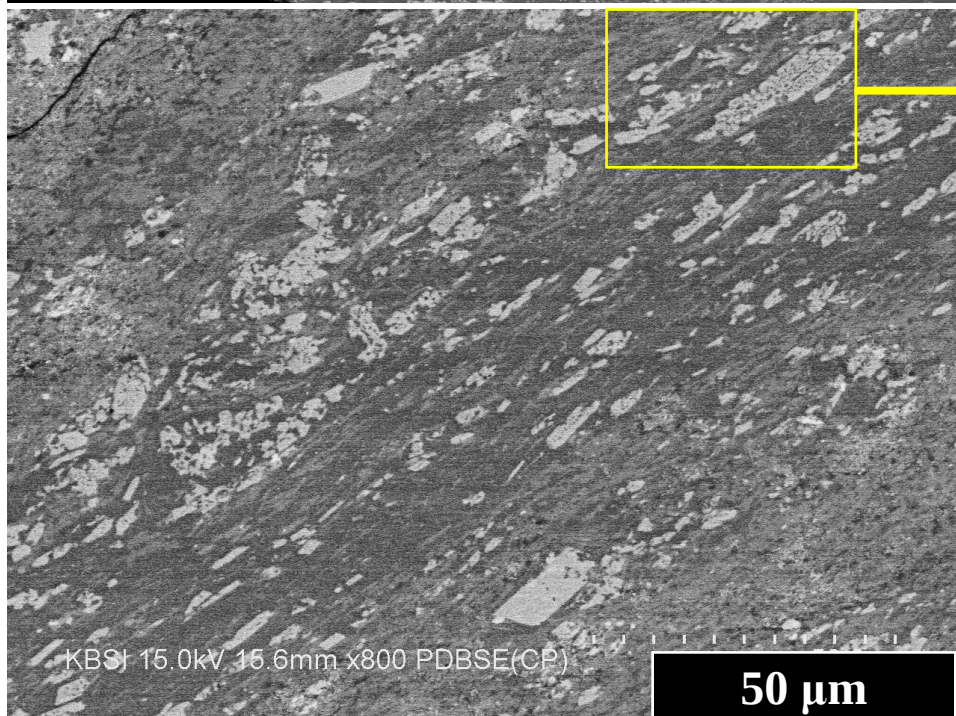
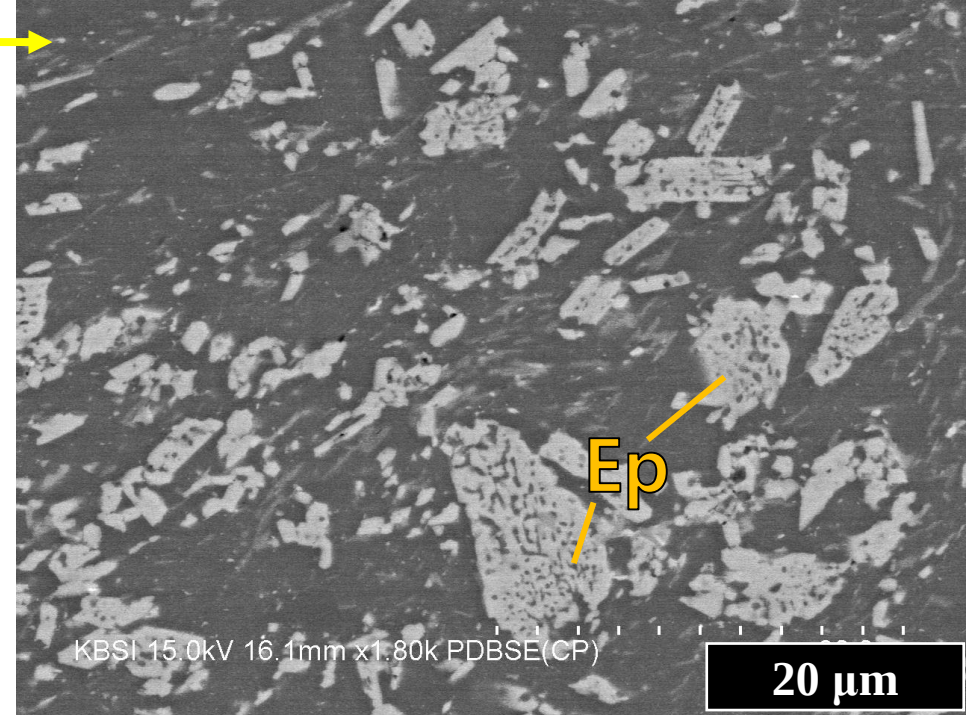
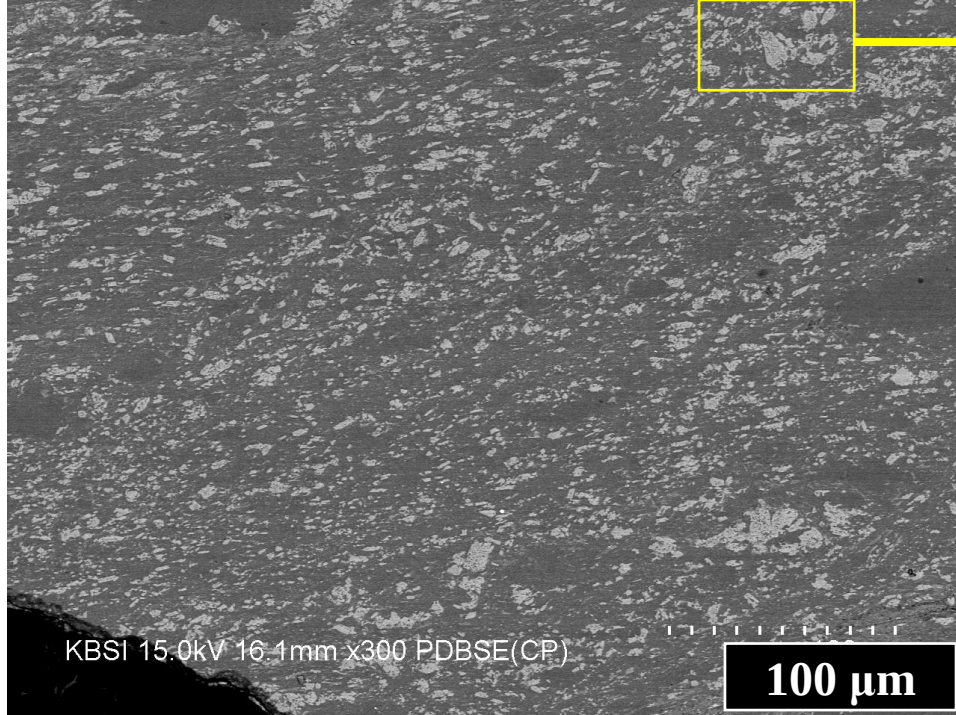
Injection of greenish layer



3 cm

Greenish layer matrix

- epidote
- phengite
- albite
- quartz



Protomylonite

C' →

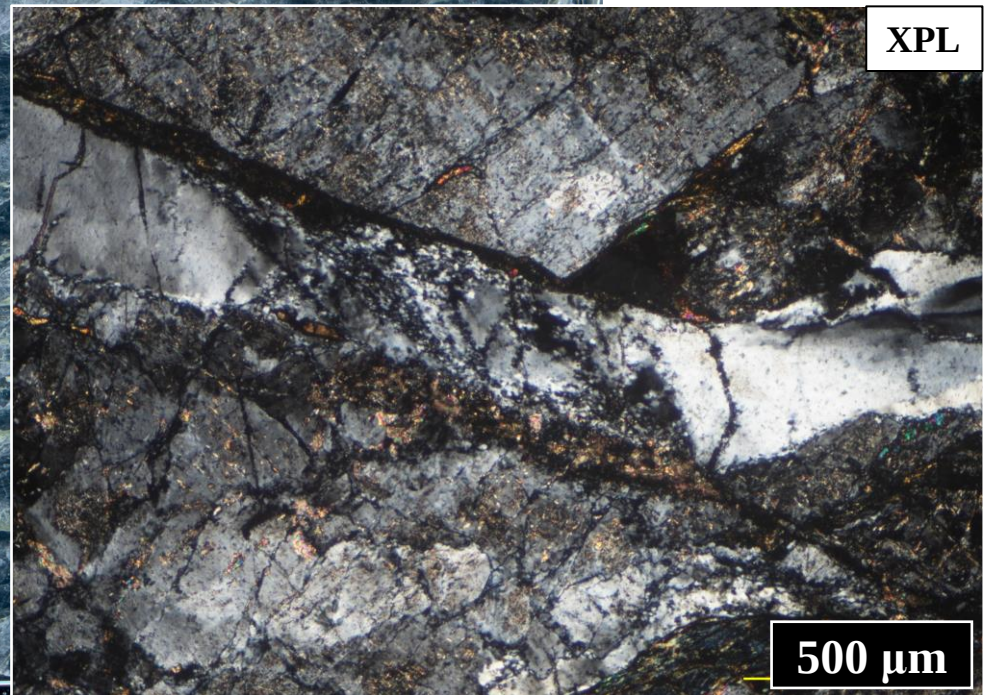
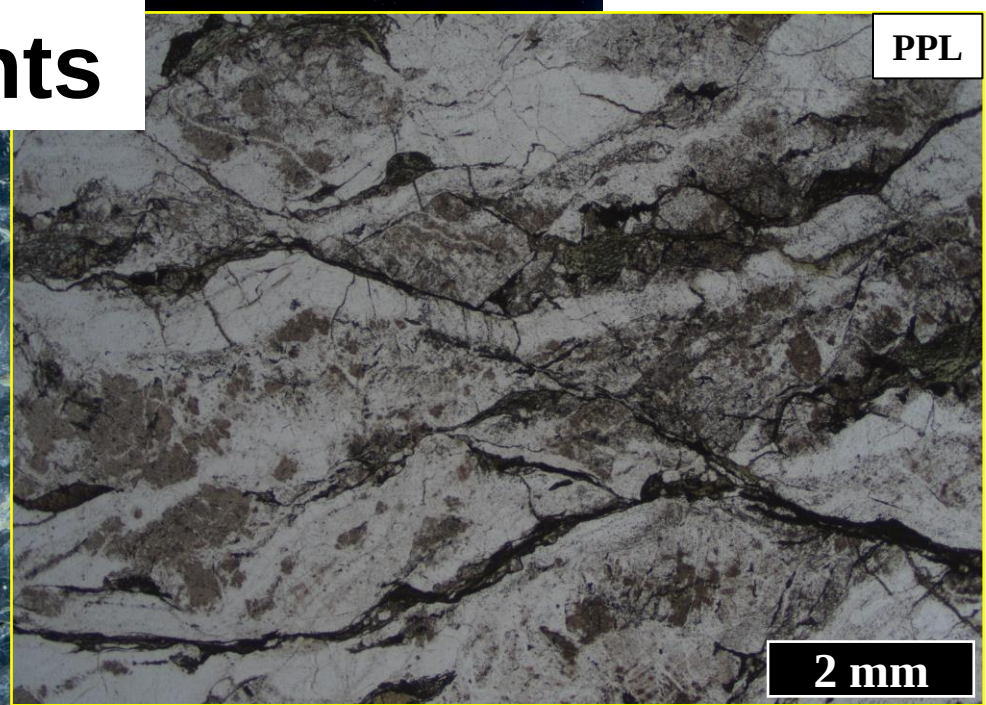
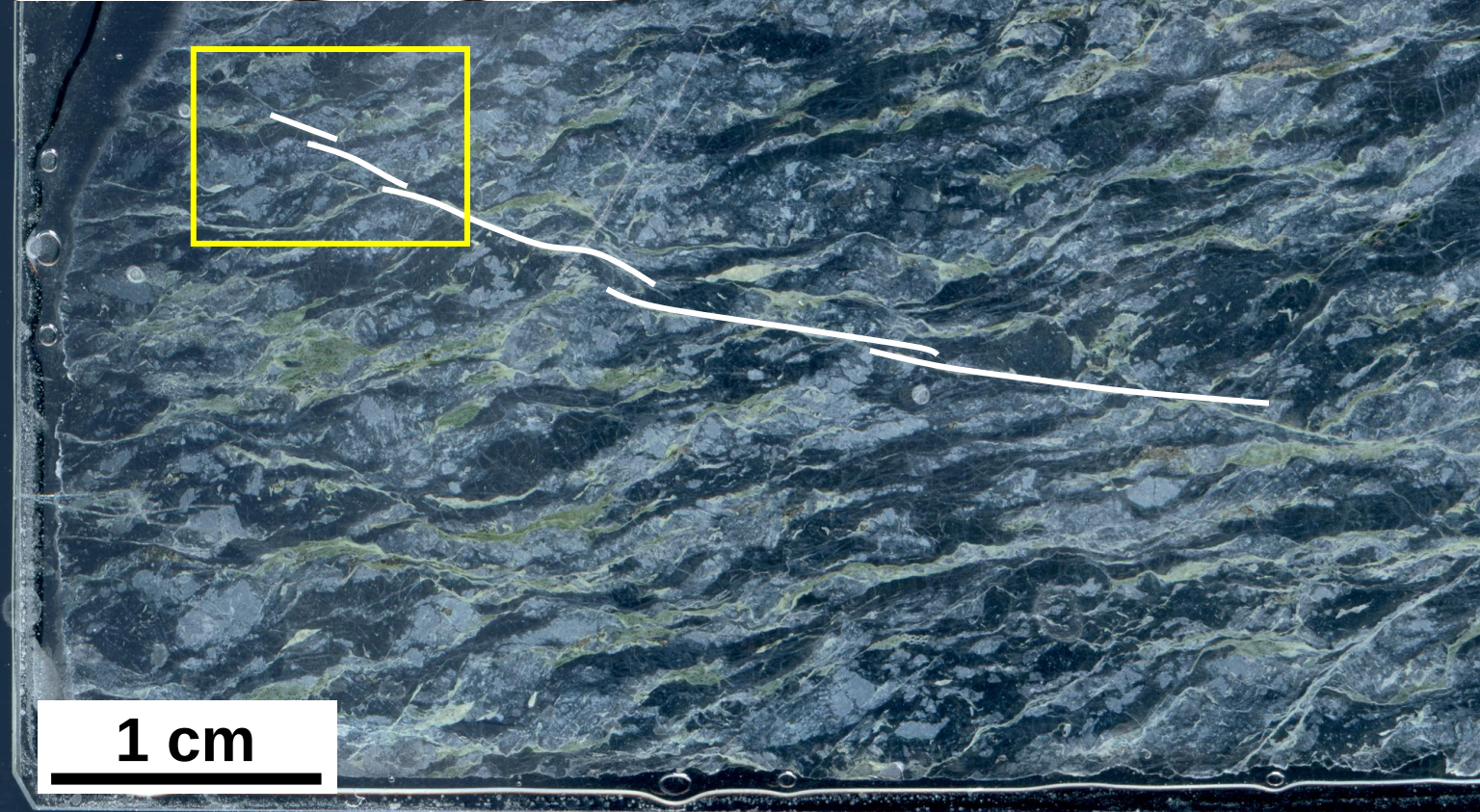
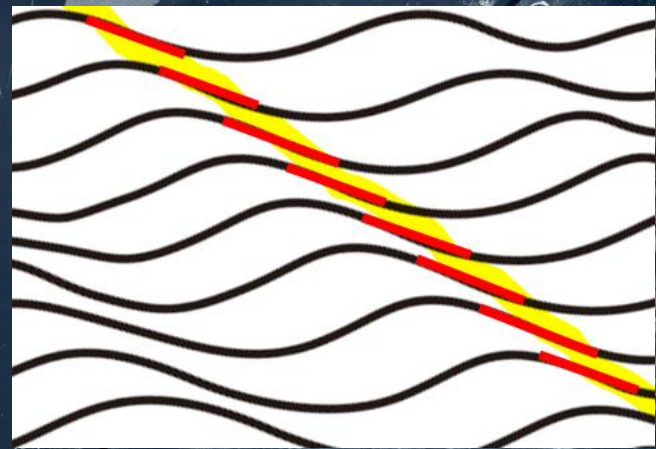
S



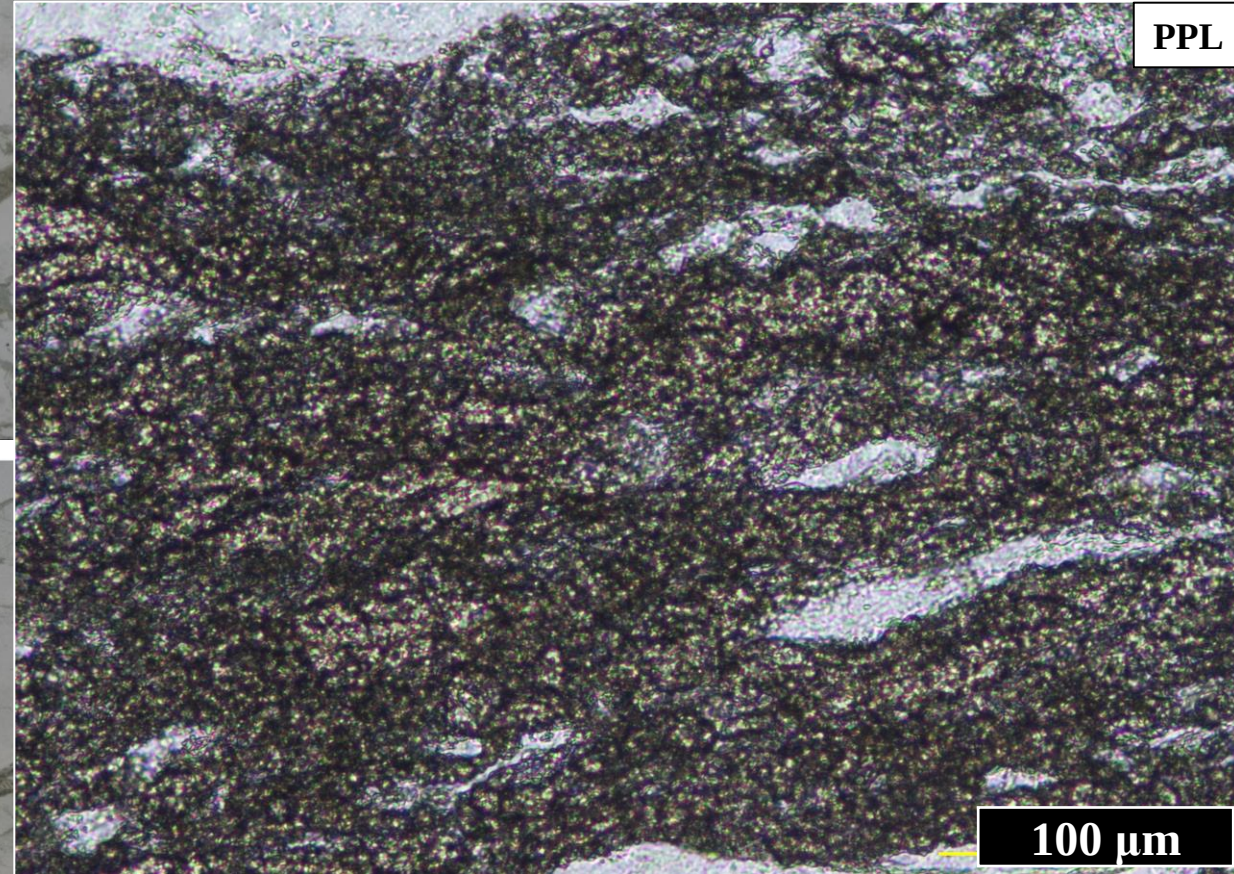
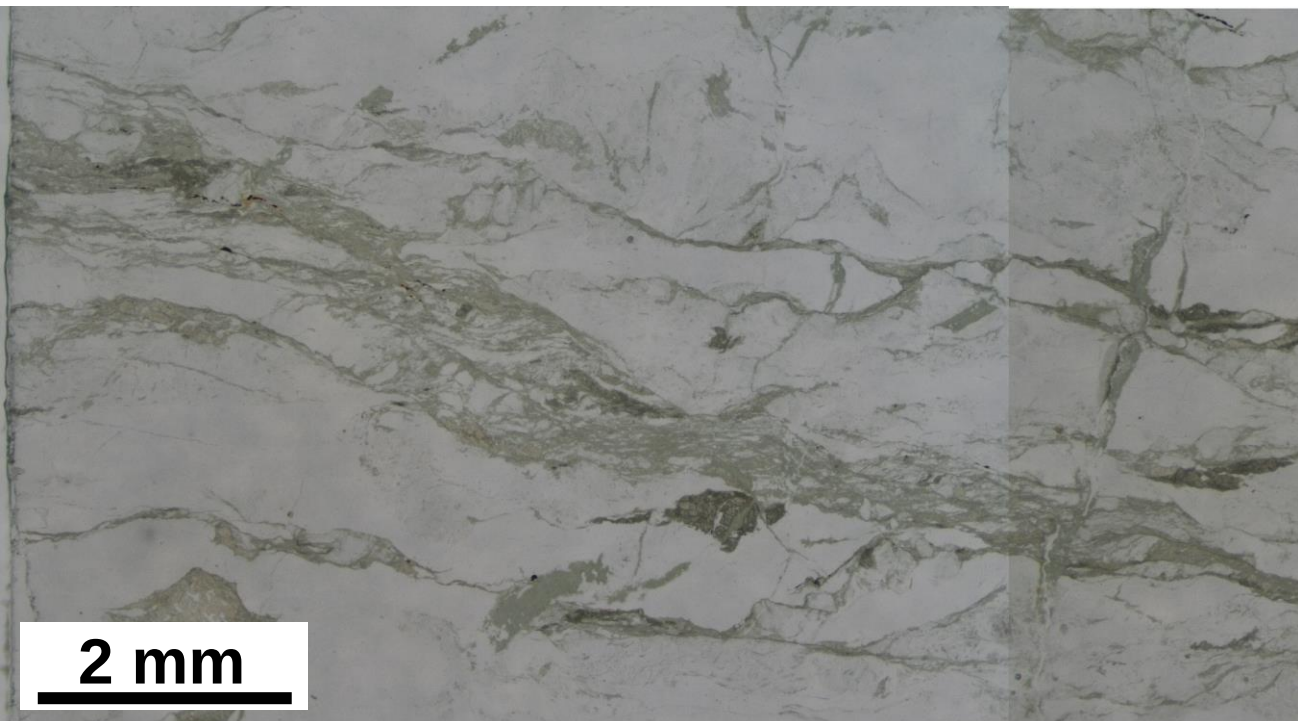
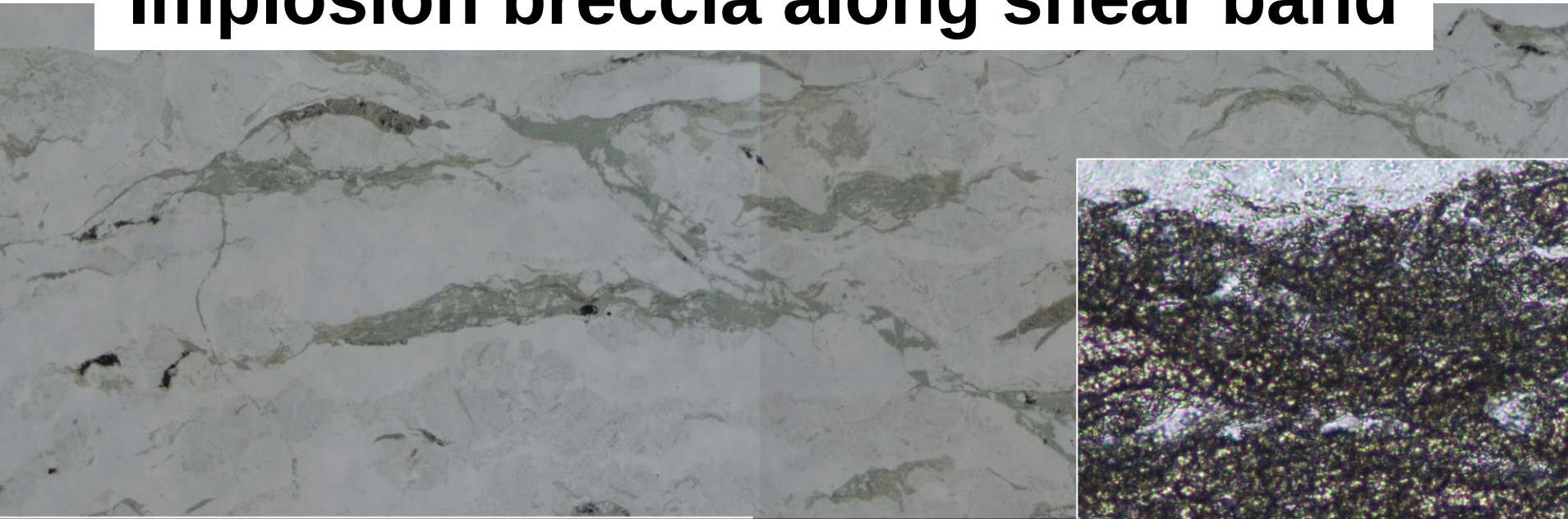
← C

← C

Right-stepping shear band segments

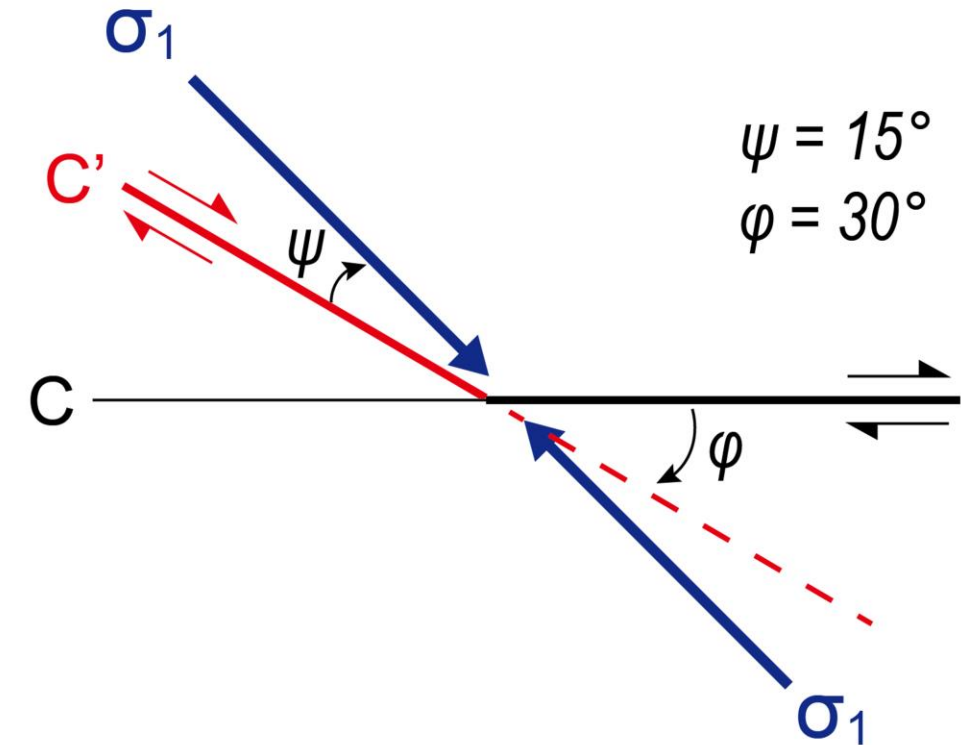
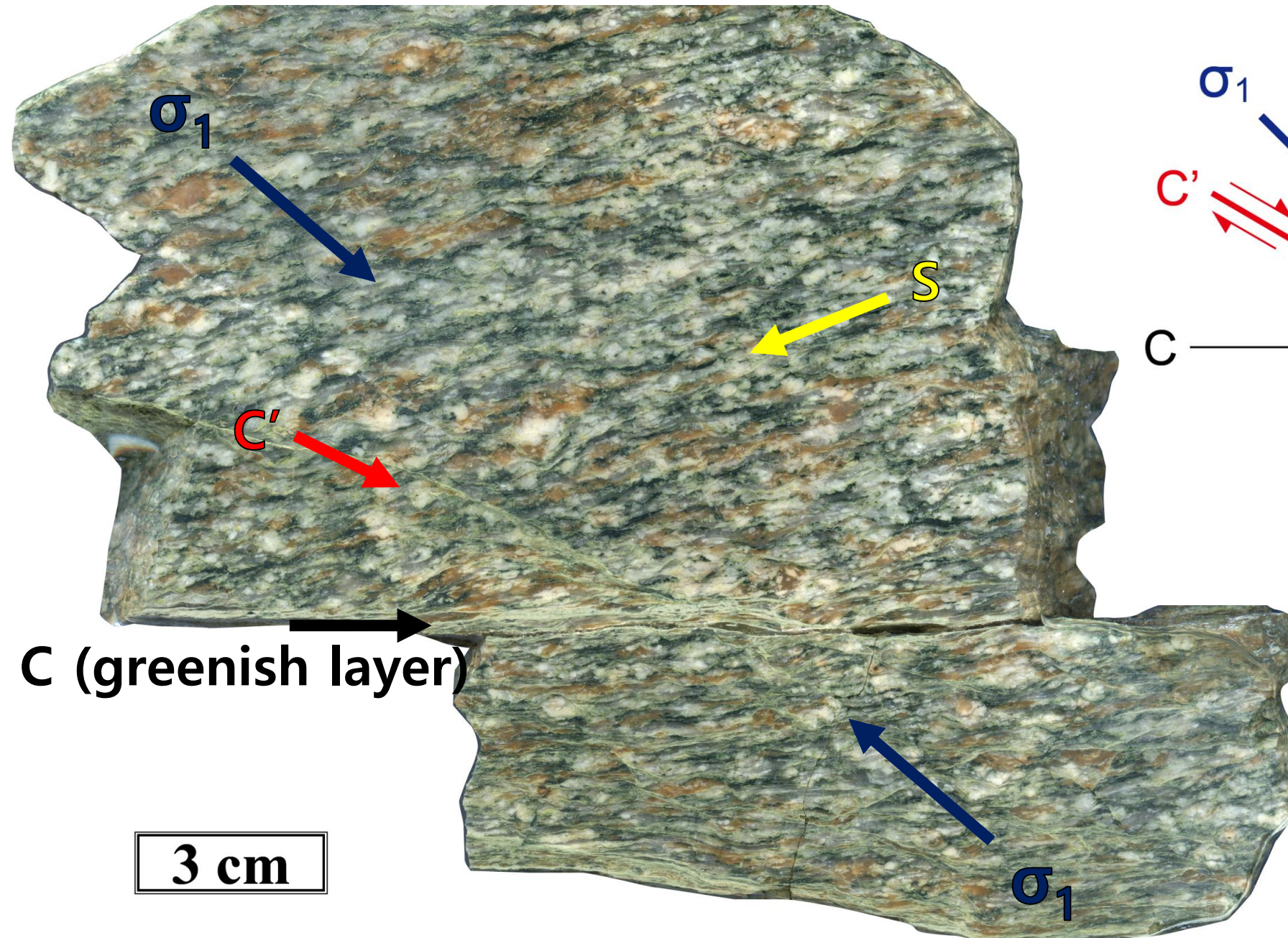


Implosion breccia along shear band



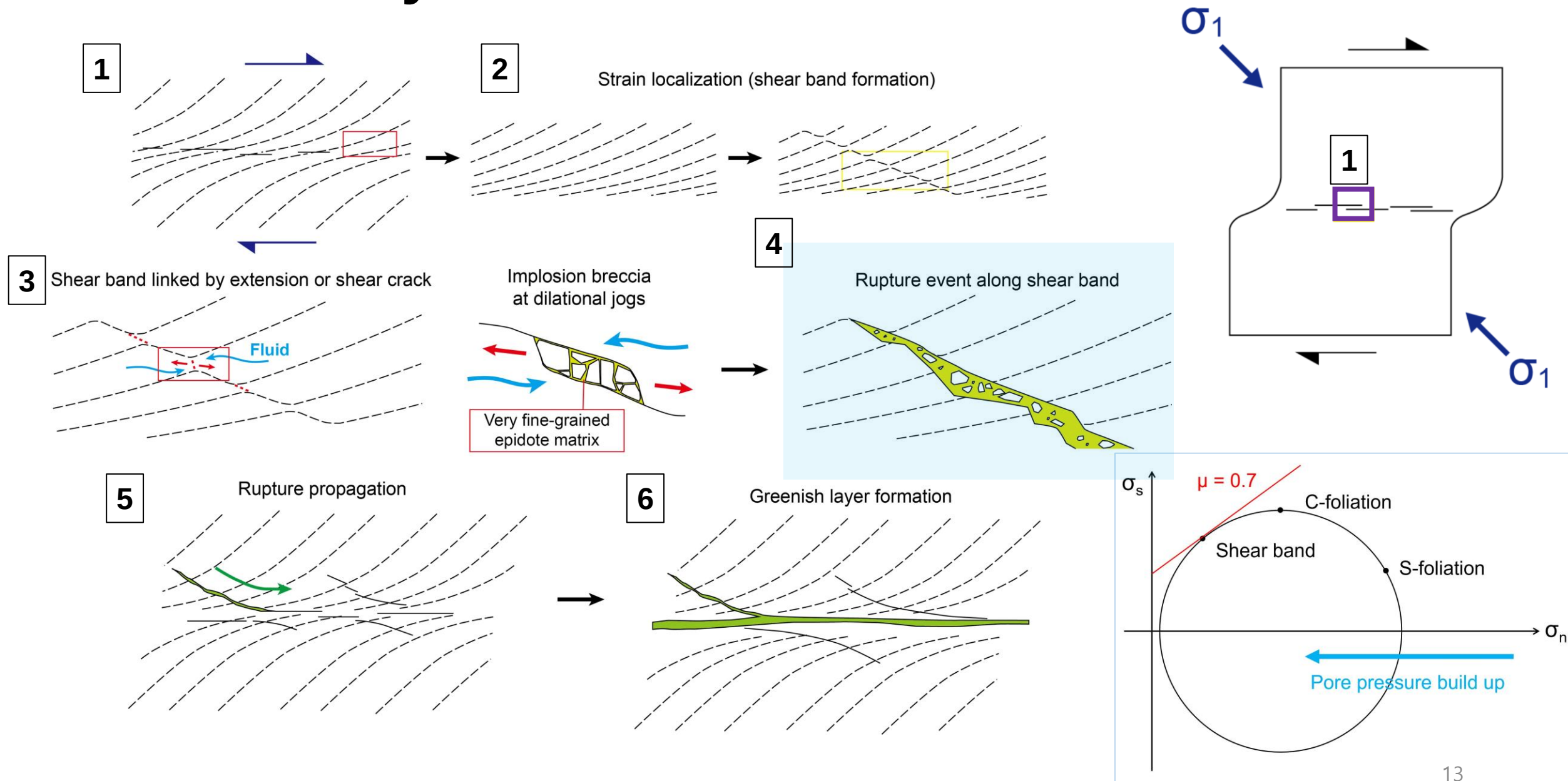
Matrix: epidote(>60%), feldspar, quartz → **Fluid-rich condition**

Rupture propagation from shear band to C-foliation



Kame et al., 2003

Greenish layer formation model



Thanks for your attention 😊