Carbon ordering on thrust planes and distributed shear zones

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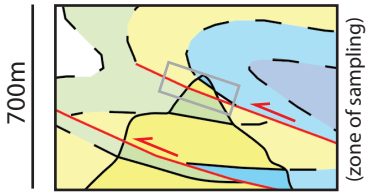
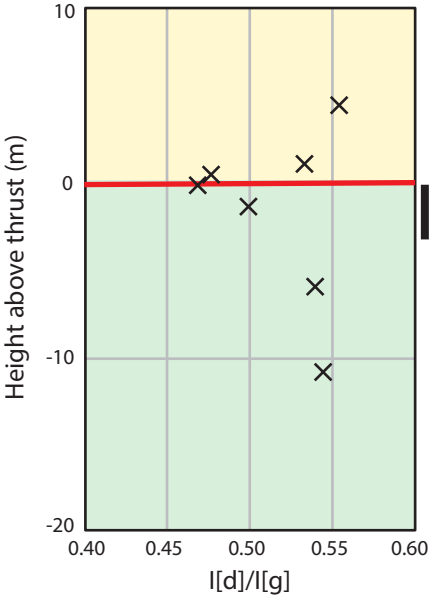
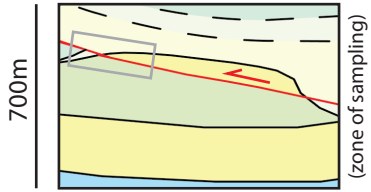
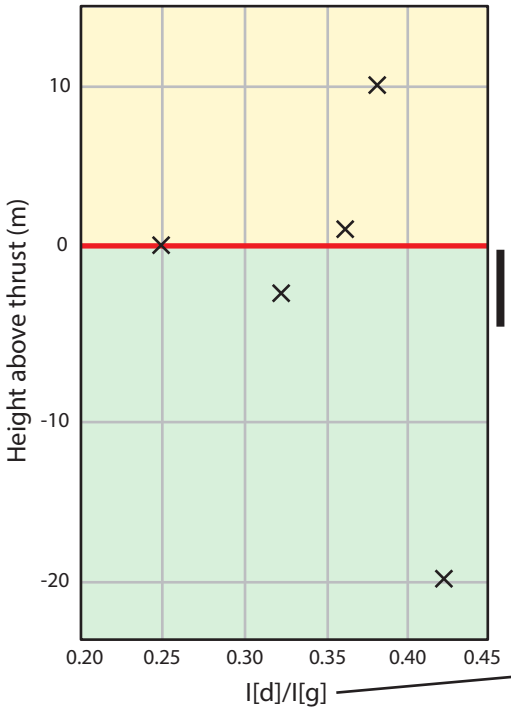
TENNEVERGE THRUST
Displacement at sample site: 700m





SAVLADON THRUST
Displacement at sample site: 1500m





- We compare Raman spectral peak intensity ratios across two Alpine thrust planes.
- The thrusts are not connected but involve the same stratigraphy: Tithonian limestone (hanging wall) and Valanginian shale (footwall). The upper 3m of each footwall constitutes a distributed shear zone (denoted by black bars below).
- A clear shift towards lower intensity ratios (I[d]/I[g]) is observed on both thrust planes. The shift is more abrupt in the brittle hanging wall, and more gradual in the shear zone of the footwall.
- **This has implications for the use of Raman spectroscopy as a geothermometer in fold-thrust belts.**

I[d]/I[g] = Raman spectral peak intensity ratio.
D-peak intensity is divided by G-peak intensity.
Representative sprectrum shown below.