

Marine geophysical tools applied to active tectonics: fault characterization as input for hazard assessment.

Proposed topics for the open discussion

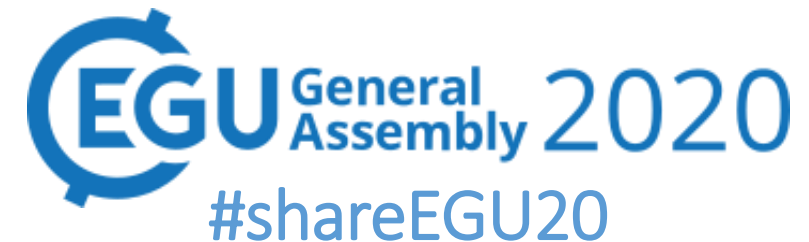
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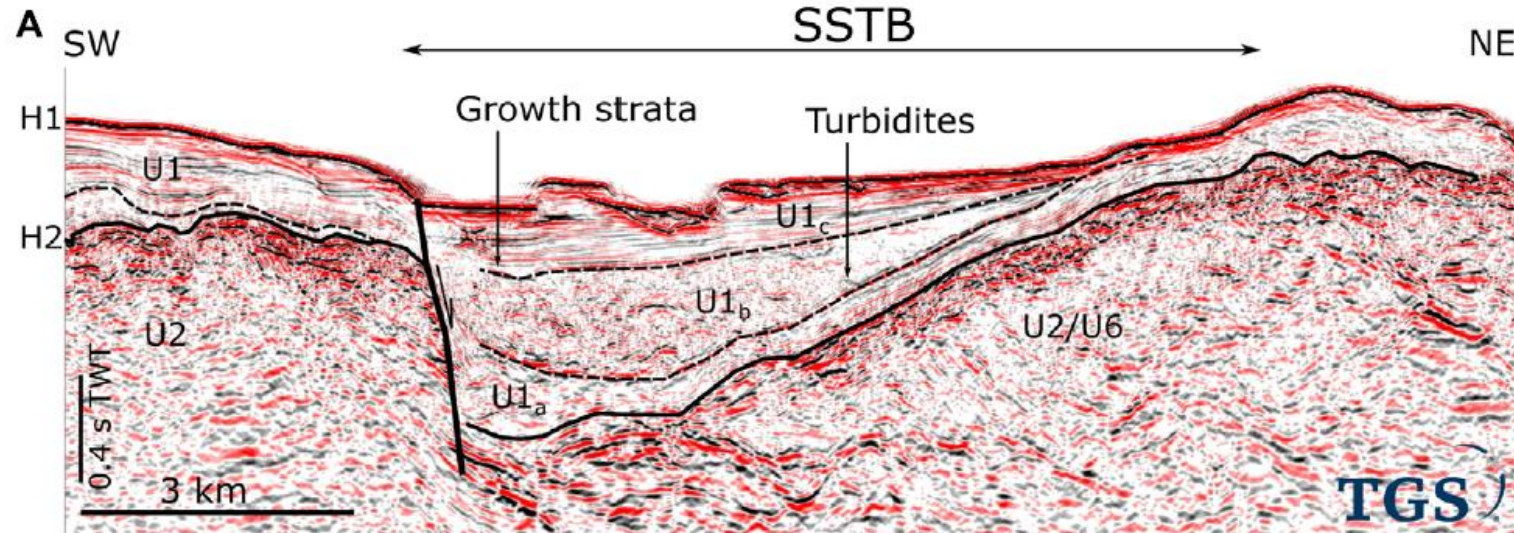
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- **Faults:** What to do to improve the slip estimations offshore?
 - Approaches on the offshore to estimate fault slip rates. A better constraints on displacements and sediment ages is needed?
 - How to constrain slip rates when you do not have ages but displacements observed in seismic profiles → Go to slide 3!
 - Is there a necessity to carry on probabilistic slip rate assessments?

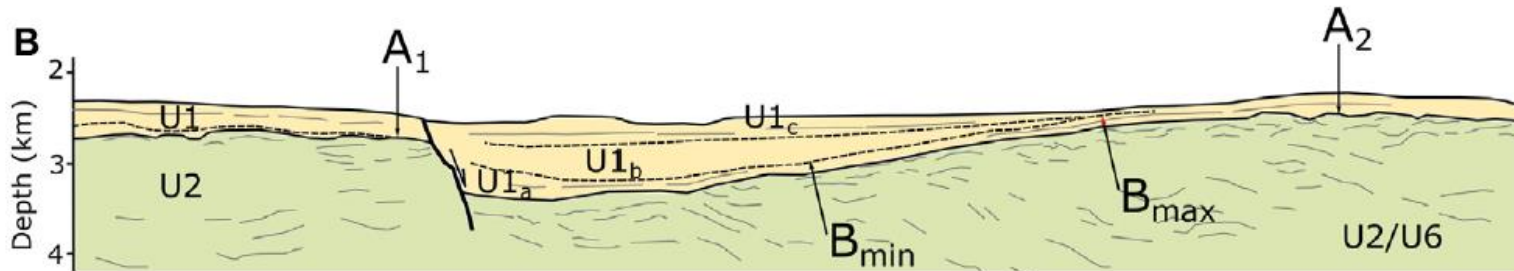
Constrain slip rates when you do not have ages but displacements observed in seismic profiles.

One approach is to consider constant average sedimentation rate for pre-tectonic strata.
Is it always correct? Do you think that there could be better approaches to this problem?



SSTB – Shallow syn-tectonic basin
 H1 – seafloor
 H2 – Messinian unconformity
 U1 – Pliocene-Holocene
 U2/U6 – pre-Messinian

$A_{1/2}$ – Thickness of U1 away from SSTB
 B_{min-max} – Thickness of U1 before tectonic inception (U1a)
 U1b-c – Syn-tectonic deposits



Assuming constant average sedimentation rate for $A_{1/2}$ and U1a (average of B_{max} and B_{min}), the age of inception is 2.6 Ma

from Maesano et al. (2020) *Frontiers in Earth Science* doi: 10.3389/feart.2020.00107

- **Mass Transport Deposits:**

- Few examples of very well-known MTD (e.g. Storegga). Can we apply what we know to other less-known MTD? What are the “transferability” criteria?
- What might be the criteria to categorize the MTD from the collected information/data?
- Relationship between landslides and small tsunami waves → this is a possible near source hazard to shelf infrastructures.

- **Tsunami:**

- Influence of geometrical constrains of fault plains in hazard. Is it is needed a very detailed fault plane for modelling or no critical?