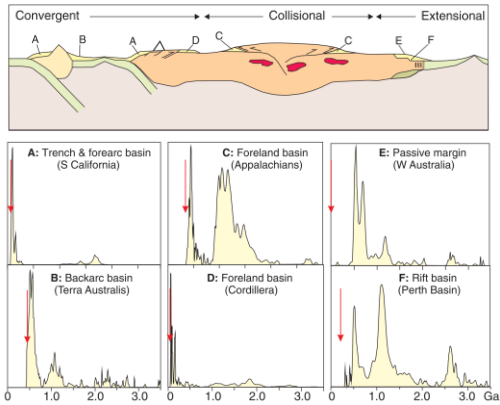


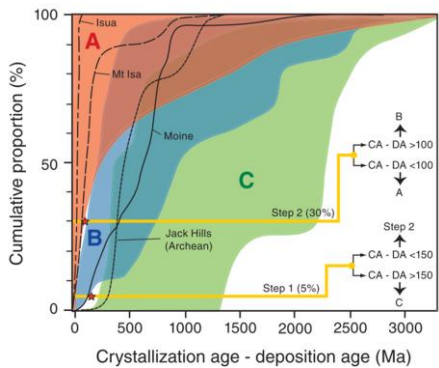
# Implications of the detrital zircon record for global plate tectonic reconstructions in deep time

## Q: Can detrital zircon data identify tectonic setting?

Cawood et al (2012) proposed the shape of detrital zircon spectra is characteristic of the tectonic environment of deposition - convergent, collisional, and extensional.

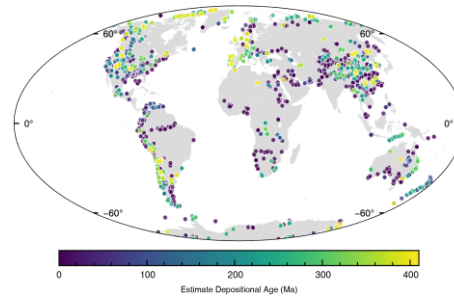
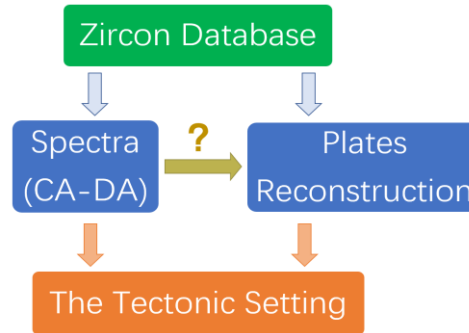


(P. A. Cawood et al., 2012)

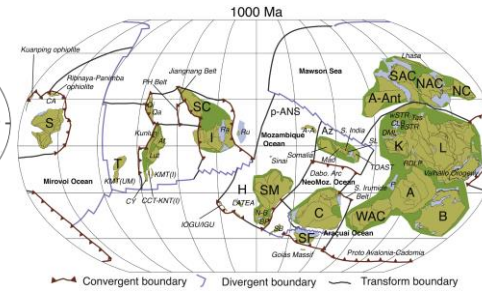


(P. A. Cawood et al., 2012)

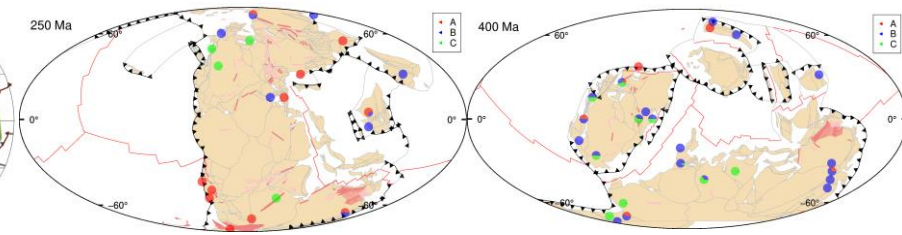
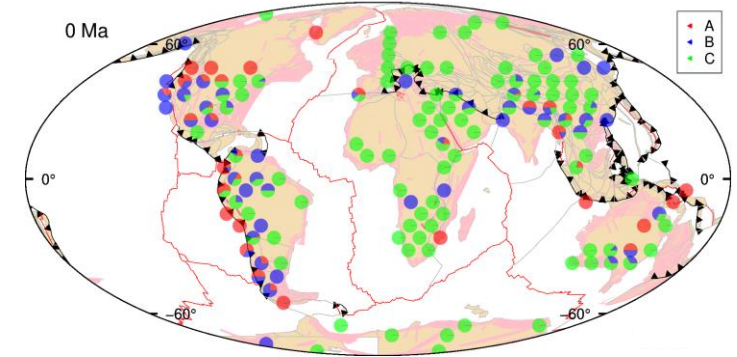
Here, we investigate the applicability of this method to test and refine global full-plate tectonic reconstructions in deep time, using a published database of zircon ages.



(the database from Puetz, 2018)

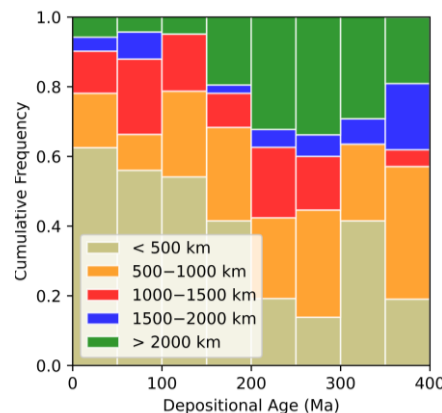


(Merdith et al., 2020)



A: Convergent setting B: Collisional setting C: Extensional setting

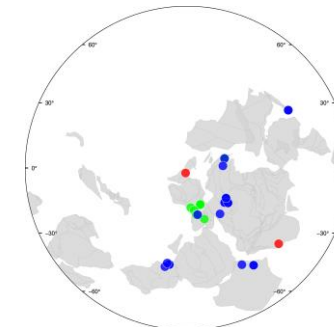
## Plot of Category A Samples



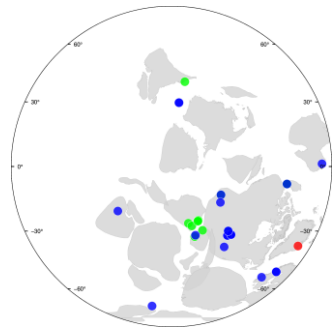
Most category A samples which deposit in relatively recent times (<150 Ma) are close to subduction zone (~64 - 79% success depending on distance threshold used).

For older times, the classification is less successful - a likely reason is the decreasing reliability of reconstructions further back in time, and suggesting the zircon data could identify areas for revision.

Comparing alternative Rodinia configurations, we observe that available zircon spectra are more consistent with scenarios placing



(900Ma, Merdith et al., 2020)



(900Ma, Li et al., 2013)