Magmatic evolution in a sedimentoed margin and implications for lithospheric breakup: insights from high-resolution seismic data from the South China Sea

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Questions:
When, where and how the magma came in during the development of the rifted margin?
1. Geological setting in the mid-northern SCS

The study area covers from the hyperextened Liwan subbasin to ocean-continent transition.
2. Structures reminiscent of magmatic additions
2.1 Dome shaped highs (DSHs)—mamatic intrusions

Rare extensional faults offset the top-basement detachment; the seismic basement is decoupled with the syn-rift sequences and structures. The detachment surface was uplifted and formed DSHs.
1. The detachment surface was uplifted and formed DSHs.
2. DSHs interacted with the syn-rift sediments, which enable to define the timing of DSHs.
3. DSHs are linked with syn-rift magmatic intrusions.
2.2 Cone shaped high-volcano during final breakup

Zhang et al. In review.

Larsen et al., 2018
Based on the observations of magma-related structures, we focus on:

2. Defining the forms and distribution of magmatic additions

3. Timing and migration of magmatism

4. Amount of magmatic additions and their evolution as a function of the development of northern margin

Zhang et al. 2020, In review.
Thanks for your attention!