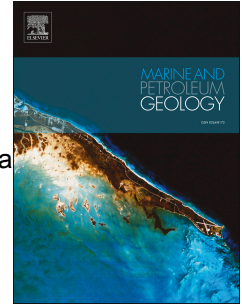


# Accepted Manuscript

Continental rifting and sediment infill in the distal part of the northern South China Sea in the Western Pacific region: Challenge on the present-day models for the passive margins

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1 Continental rifting and sediment infill in the distal part of the northern  
2 South China Sea in the Western Pacific Region: challenge on the present-  
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11 **Abstract**

12 Well-known difficulties in imaging structures and sediment infill in the distal  
13 margins covered by deepwater and thick sediment in the western Pacific have limited  
14 our ability to interpret rifting-to-drifting processes of these margins. We used a wealth  
15 of multi-channel seismic profiles and drilling data to construct a regional stratigraphic  
16 framework for the Cenozoic strata in the Xingning-Jinghai Subbasin, which is now  
17 located to the north of the apparent oceanic crust in the South China Sea. Eight  
18 sequence-bounding unconformities segmented seven sequence stratigraphy can be  
19 confidently recognized in our survey using mostly standard criteria for identification.  
20 The particular arrangement of strata elements in the syn-rift succession presents two  
21 contrast geometry sedimentary packages, whose pattern is different with that bounded  
22 by high-angle faults on the continental shelf observed by the previous studies. In the  
23 Xingning-Jinghai Subbasin, strata pattern on the hangingwall of the low-angle faults  
24 shows that the faults bounding the depocenters were initially formed by high-angle  
25 faults, which is similar to the present-day high-angle faults on the continental shelf.  
26 Subsequently the high-angle faults in the deepwater region were rotated to be  
27 extensional detachment low-angle faults, which extremely thinned the crust from ~33

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