

## Geological records related to ridge subduction in the back-arc basin: a case study from East China Sea Shelf Basin

\*Shunli Gao<sup>1</sup>, Jun Zhao<sup>1</sup>, Senqing Hu<sup>1</sup>, Xiaowei Fu<sup>2</sup>

1. China National Offshore Oil Corporation (CNOOC), China Limited-Shanghai, 2. State Key Laboratory of Marine Geology, Tongji University

The consequences resulting from the ridge subduction have been widely observed. However, the according changes in the back-arc region are poorly known. During 60-50 Ma, the Izanagi-Pacific ridge subducted beneath the Eurasia roughly parallel to the trench (Müller et al., 2008;). This event has been recognized in the accretionary prism of Shimanto Belt (Raimbourg et al., 2014) and magmatic belt as the transition of geochemical composition (Imaoka et al., 2011) in the SW Japan. The performance related to this phase of ridge subduction is not clear in back-arc realm. The Cenozoic East China Shelf Basin (ECB) was suggested to be a back-arc basin, which formed by the subduction of Izanagi Plate, Pacific Plate and Philippine Plate, respectively. In this study, we firstly observed a strong magmatic event in the northern ECB at ~53 Ma, based on zircon U-Pb dating of granite samples which selected from the bottom of Well HZ8 located in Jinshan Sag of Changjiang depression. According to the seismic sections, this granite intrude into the Paleocene strata which was dated by microfossils and zircon U-Pb dating of the volcanic interbred. Furthermore, the high magnetic anomalies related to this magmatism show that the anomalies zone tends NE-SW and connected with the Yushan Uplift and Haijiao Uplift. Thus, we infer this magmatism belt may distribute in a large region. Moreover, a regional uplift event was observed in the east of Changjiang Sag resulted in the obvious truncation of the older layers (Paleocene and lower Eocene) and a large alluvial fan in the west of this uplifted zone. Because the absence of the thrust faults in the seismic sections, we proposed that this uplifted zone could result from the intrusion of the magmatism. This scenario means the magmatic belt jumped inland and into the back-arc basin (Changjiang Sag). The further geochemical composition of volcanic or intrusive rocks in other industrial wells in Xihu Sag or Fujiang Sag will give more details about this ridge subduction event.

Keywords: East China Shelf Basin, ridge subduction , zircon U-Pb dating, high magnetic anomalies, regional uplift event