The characteristics and evolution of accommodation zone in Xihu Sag, East China Sea Shelf Basin

Bin Xu, Zhiping Wu, Yanjun Cheng, and Yining Dai
School of Geosciences, China university of petroleum(East China), Qingdao,China (wulin1234@vip.qq.com)

Accommodation zone is an important deformation structure in sedimentary basin, which is significant to understanding the basin structure. The formation and evolution of the Xihu Sag is controlled by the NNE-striking faults, whereas the NNE-striking deformation is offset by the NW-striking accommodation zone. However, the structure and evolution of the accommodation zone are poorly known. Based on the dips and activation rates of related NNE-striking faults on two sides of the NW-striking accommodation zone, 8 styles of NW-striking accommodation zones are divided in this sag, including the synthetic approaching style, synthetic broken line style, synthetic overlapping style, reverse approaching style, reverse broken line style, composite approaching style, composite broken line style, composite overlapping style. The relative accommodation ratio of the accommodation zone can be reflected by the difference-value of the faults activation rate of the NNE-striking faults. The results show that: (1) the most of the NW-striking accommodation zones formed at Early Cretaceous with low relative accommodation ratio, and reached its peak at Eocene, and disappeared at Late Oligocene. (2) The temporal and spatial differences of the NW-striking accommodation zones are very common in the Xihu Sag. Spatially, the accommodation zones are mainly developed in the western slope of Xihu Sag, and rarely developed in the middle and eastern of the Xihu Sag. Temporally, the accommodation zones developed in the northern area of the western slope of the Xihu Sag during the early stage, whereas, these zones migrated to the southern area of the western slope of the Xihu Sag during the late stage. This study on the tectonic evolution of the accommodation zone provides significant support to the study on the tectonic evolution of the Xihu sag.