

## **Orocline and micro block amalgamation in the eastern Central Asian Orogenic Belt**

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The eastern segment of the Central Asian Orogenic Belt (CAOB) is occupied by NE China and its adjacent areas, which locate in a triangle area surrounded by Siberian Craton to the northwest, North China Craton (NCC) to the south and Pacific oceanic plate to the east. In this study, we did a detailed review of the tectonic evolution of NE China and regional comparison and correlation of different tectonic units in the eastern segment of CAOB. We re-subdivided NE China in the eastern CAOB into two old blocks of Erguna block (EB) and Jiamusi block (JB) with Precambrian basement, Xing'an accretionary terrane (XAT), Songliao accretionary terrane (SAT) and Zhanguangcai accretionary terrane (ZGCAT), which are separated from each other by the Xinlin-Xiguitu suture, Hegenshan-Heihe suture, Longfengshan suture and Mudanjiang-Yilan suture. The ZGCAT is dominantly composed of early Paleozoic magmatic arc materials and minor late Paleozoic igneous rocks with an old Yichun mini-block, while the SAT consists dominantly of the late Paleozoic magmatic rocks with two small old blocks of the Xilinhot and Longjiang mini-blocks. According to the tectonic correlation and comparison of different tectonic units, we established a new orocline tectonic model for the eastern CAOB: 1) the XAT and ZGCAT accreted to the southern margin of Ereendavaa-Erguna-Mamyn block and Bureya-Jiamusi-Khanka block with the closure of Xinlin-Xiguitu-Heilongjiang ocean during the early Paleozoic; 2) Subsequently, the SAT accreted to the southern margin of integrated XAT-ZGCAT terrane with the closure of Hegenshan-Nenjiang-Longfengshan ocean during the late Paleozoic. These initially W-E linear shape of accretionary orogenic belts was ultimately bent southward through Paleozoic time and constituted a huge Paleozoic orocline, NE China

Orocline, which collided with NCC by a scissor-like style closure of Paleo-Asian Ocean from west to east along the Solonker-Xar Moron-Changchun-Yanji suture during the late Permian-middle Triassic. The NE China orocline, together with Tuva-Mongol Orocline and Kazakhstan Orocline in the western CAOB, constituted a huge multiple orocline tectonic system in the CAOB. Our study will contribute to the understanding on tectonic evolutions of CAOB and the NE Asian and suggests that the orocline should be a common tectonic model for accretionary orogeny.