A possible trajectory of Chinese Sulu collision belt toward the East

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Reinterpretation of tectonic situation of Korean peninsula (KP) revealed that the 25-km-thickness of KP′s Moho plane is not sufficient to have continent-continent subduction, and that recent tectonic data of CHAMP (CHAllenging Minisatellite Payload) and GRACE (Gravity Recovery and Climate Experiment) (S. Maus et al, 2004), differential velocity of P wave (T. Hao et al, 2003), and basic volcanic occurrence (A. Ishiwatari et al, 2003) on the far east Asia do not support connecting the eastern extension of Chinese Dabie-Sulu collision belt and Korean Imjingang fold belt (IFB) or Ogcheon fold belt (OFB). Regional geological mapping data, coupled with structural, petrological and geochronological data of IFB and OFB revealed that: (1) the IFB does not extend eastwards across the KP, but curves to the northern KP, (2) IFB and OFB should have equivalent stratification and convergent structural characteristics such as two limbs to satisfy the indentation model (Yin and Nie, 1993), however, they do not show any structural similarities, (3) ultrahigh pressure minerals such as coesite or diamond characterizing the Dabie-Sulu metamorphic rocks in east China have not been found from metamorphic rocks in the IFB or OFB, however, metamorphic minerals such as syntectonic muscovites of mylonites (226 Ma., Kim et al., 2000), amphibolite-faces peak metamorphism of medium-pressure type (255 - 240 Ma., Lee & Cho., 1995), omphacite inclusion in garnet (230 - 300 Ma., Oh et al., 2002) are occurred not only along the IFB but also between IFB and OFB, (4) CHIME (Chemical Th-U-total Pb Isochron Method) and Sm-Nd age data show 250 Ma thermal event was not restricted to the IFB but was common throughout the KP, (5) SHRIMP age data (Cho, 2004) indicate the sediments of OFB constrain to 400-450 Ma. (6) Sedimentation age of OFB is measured to c. 370 Ma by CHIME (K. Suzuki et al, 2005). The results of the above studies do not support the previous tectonic models that the IFB in the central KP is an eastern extension of the Quinling-Dabie-Sulu collisional belt in China.