Discussion on pre-Mesozoic basement in Hefei basin, western Tan-Lu fault belt

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Tan-Lu belt is an important slide-slip fault system in east China continent, its movement and tectonic characteristics are intensively studied by Chinese experts from various aspects (e.g., [1-5]). The basement age of Hefei basin co-existing with this gigantic fault system remains unknown due to the very deep Mesozoic red sedimentary accumulation of land facies (c.a. 5000-10000m).

In this study, we obtained equences of samples of the basement in Hefei basin, 20 km away western Tan-Lu fault belt with an deep drill of Ancan Drill I with the large-scale exploration for oil and natural gases operated by Shengli Oil Field Co. Ltd, China. Drill Ancan-I is the only ultra deep drill in the Southern North China basin, correct understanding of pre-Mesozoic stratum is very useful for the study of theory and mineral prospecting. Reliable stratigraphic markers, such as paleontologic evidence, have not find in drill sample. Based on geotectonics, geophysics, and geochemistry, and the correlation of lithology, thickness, geophysics and geochemical indicator, the study suggests that the dark claystone in Drill Ancan-1, under the exposure level of Indo-China movement, is similar to Qingbaikou System, different from Permo-Carboniferous.

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[1] Xu J.W *et al*. (1987) *Tectonophysics,* **134**, 273-310. [2] Yang X.Y. *et al*. (1998) *Acta Geologica Sinica*, **72**, 37-50. [3] Yang X.Y. *et al.* (2001) Neues Jahrbuch für Mineralogie, Monatshefte, H(9-10) 415-432. [4] Yang X.Y. *et al*. (2007) *Acta Geol. Sinica*, **76**, 297-311. [5] Yang X.Y. *et al*. (2008) *Acta Geol. Sinica*, **82**:562-576.

Coccolithophorids blooms and their biogeochemical-controlling features: Varied water masses and nutrient fluxes in the southeastern Bering Sea

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After 1997, coccolithophorid blooms were frequently observed on the eastern Bering Sea shelf, where diatoms have had the most dominate distribution. The recent climate change has dramatically altered the water mass characteristics. Here, we present CTD, Chl-a, nutrients and phytoplankton data, oxgen isotope compositions (0.005 ‰) and rare earth element concentration collected on R/V *Mirai* (MR00-K06, MR01-K04 leg2, and MR06-K04 leg2) and T/S *Oshoro-Maru* (OS105, OS115, OS124 and OS159) cruises. Our goal is to clarify the relationship between changes in distribution of coccolithophorids and water mass composition. The linkage leads to understanding the connection between climate change and impact on a biogeochemial system.

The water mass structure is divided into three domains, separated by density fronts. These water masses are defined by their origins: Pacific water (Outer), cold water mass (Middle), and river water (Inner). The appearance of *E. Huxleyi* is well correlated with the nutrient supply and consumption from summer to autumn. Therefore, the distributions of coccolithophorid are controlled by the spatial variations of water mass linked with nutrients, which are controlled by the strength of the density stratification on the shelf and the fractions of cold water mass and the riverine influence.