

## The effect of paleoproductivity to the development of organic-rich Wufeng-Longmaxi shale in the Middle Yangtze region, China

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Trac elements (e.g. Ba and P) were widely used to reveal the characteristics of paleoproductivity for shales. Previous study stated that no positive relationship occurred between paleoproductivity proxies (P/Ti, Ba/Al, Ba<sub>xs</sub>) and total organic carbon (TOC), and drew a conclusion that paleoproductivity was not the controlling factor for the development of Wufeng-Longmaxi shale[1]. However, the abundant graptolites implied the prosperous biomass and a high paleoproductivity in these shales. The influence of paleoproductivity on the development of organic-rich Wufeng-Longmaxi shale needs more discussions.

Chen et al.(2010) proposed recombined paleoproductivity coefficient composed by excess-Cu, excess-Ni and excess-Zn through principal component analysis ( $Y=0.593955 \times Cu_{xs} + 0.523396 \times Ni_{xs} + 0.610962 \times Zn_{xs}$ )[2]. Our data showed that this proxy correlated well with TOC of Wufeng-Longmaxi shales. This relationship indicates that a) high paleoproductivity is one of the main factors controlling the development of Wufeng-Longmaxi shale; and b) the recombined paleoproductivity coefficient is a useful proxy to reflect paleoproductivity of ancient shales.

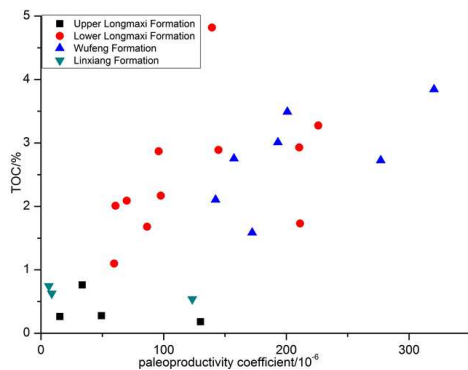


Figure 1: Crossplot of TOC versus paleoproductivity coefficient

[1] C.Chen et al (2016) Marine and Petroleum Geology 76,159-175. [2] H. Chen et al (2010) Journal of Palaeogeography 12(3), 324-333.