The paleo-redox environment of the deep sea at the P/T boundary based on concentrations of redox-sensitive elements

Takuya Kato[1], Ryuji Tada[2], Eiichi Tajika[3], Shigenori Ogihara[1], Satoshi Yamakita[4]

[1] Geological Inst., Univ. of Tokyo, [2] Geol. Inst., Univ. of Tokyo, [3] Geological Institute, Univ. of Tokyo, [4] Fac. Edu. & Cul., Miyazaki Univ.

An effort to reconstruct paleo-redox environment of the deep sea at the P/T boundary was conducted, based on the elemental analysis of deep-sea sedimentary sequence from Southwest Japan. Redox-sensitive elements, such as U, Mo, and V, showed different patterns of concentration profile. This difference is likely to be related with difference in redox sensitivity of elements. For example, uranium precipitates in suboxic condition, whereas precipitation of molybdenum requires more reductive condition as euxinic. So U/Mo ratio become higher in suboxic condition, than either in more oxidative or more reductive condition. According to this interpretation, deep sea paleo-redox environment changes from oxic to suboxic toward the boundary, and euxinic above the boundary.