STRATIGRAPHY AND GEOCHEMISTRY OF UPPER DEVONIAN CARBONATES IN CENTRAL IRAN

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During the middle Paleozoic the Iranian plate was situated on the northern margin of the Gondwanaland supercontinent which today forms part of the Alpine-Himalayan orogenic belt. Detailed microfacies analysis of Upper Devonian carbonates, indicates that the strata were deposited in a shallow marine environment. The existence of large (5-30cm) bone fragments in some horizons is a significant feature which may indicate crisis for vertebrate groups in Upper Devonian. The Frasnian/Fammenian boundary intervals are characterised by ferruginous oolitic facies, which is a unique depositional feature within these rocks. The increase of Sr concentration, indicates changes in conditions over a relatively long time span which may be occurred as direct increasing of Sr+2 in sea water, or controlled by mineralogical regime. The anomalous behaviour of d13C values indicates changes during the deposition of middle part and below the ferruginous beds. The complex pattern of two moderately large negative peaks represents strong signals which may indicate organic changes within the F/F boundary intervals. In REE diagram, Ce shows a normal trend without any large anomaly in Cerium pattern. Only several small positive changes in middle part,may indicate minor changes in oxic-anoxic condition. It means there was not changes leading to redox environment condition. Simultaneity of d13C anomaly with Fe and Sr concentration and their correlation with F/F boundary interval indicate drastic environmental changes near the Frasnian/Fammenian boundary.