

Comparison of the microscopic growth structure of the ferromanganese crusts with the glacial-interglacial cycles

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Hydrogenetic ferromanganese crusts are iron-manganese oxide chemical precipitates on the seafloor that grow over periods of tens of millions of years. The marine environmental changes and events of a long range are possible recorded in microstructure (Sorensen and Foster, 1972; Usui, 1998). For example, the crust (D96-m4) dredged on the floor of the Philippine Sea Plate in the northwestern Pacific Ocean, shows periodical lamination of characteristic pouch- or lobe-like structures.

Intervals of each lamination is about 500 μm , which bounds to about 100 k.y. when assumed the average Be-10 growth rate of 4.9 mm/m.y.. The structure was observed in the crusts from other near by seamounts.

The controlling factors will be discussed geological and environmental in the paper.

Keywords: ferromanganese crust, northwestern Pacific, growth layer