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[JJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-ZZ Others

## [M-ZZ41] Marine manganese deposits: from basic to applied sciences

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Marine manganese deposits include nodules and crusts of massive iron-manganese oxide aggregates associated with useful metals. The deposits are known as potential resources of cobalt, copper, nickel, rare earth elements, platinum, and tellurium. However, the controlling parameters on the regional and temporal variations in chemical and mineralogical composition have not been clarified yet. In this session, various factors in the growth of manganese oxides, enrichment and circulation of metals, paleoenvironment, and formation age of manganese deposits will be discussed from viewpoints of geology, mineralogy, paleocean sciences, geochemistry, microbiology, and sea floor engineering.

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## [MZZ41-P02] Implications for formation process of hydrogenetic ferromanganese crusts based on in-situ exposure experiments at sea floor

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Ferromanganese crusts are chemical sedimentary rocks widely covering deep sea floors and rock outcrops. The crusts have an important role in marine material cycling of manganese, iron, trace metals and so on. From such a point, we conducted in-situ exposure experiments at sea floors. Hino (2015MS) reported that a deposition of micron-m size Fe-Mn particles on artificial substrates which had been deployed for 11 years at depth 918m in the Daini-Bayonaïse Knoll in the Izu-Bonin arc, using electron microscopes with FE-SEM/EDS and TEM/ED/EDS. From more detailed investigation, he suggested that modern hydrogenetic crusts are formed by accumulating the particles. But the particles observed in Daini-Bayonaïse are not always precipitated on other locations and water depths. To this end, we analyzed another artificial substrates from two different areas located in North West Pacific (Kaikata Seamount, Takuyo-Daigo seamount) by in-situ exposure experiments. We considered the formation process of crusts based on FE-SEM/EDS analyses. FE-SEM/EDS analyses indicate that these micro-scale Fe-Mn particles observed in Daini-Bayonaïse Noll may ubiquitously precipitate on other locations.