
[JJ] Eveningポスター発表 | セッション記号 M (領域外・複数領域) | M-IS ジョイント

[M-IS10]古気候・古海洋変動

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本セッションは、陸と海の両方から復元される古環境情報とモデル研究の統合を目指し、数年からテクトニクスが関わる時間スケールまでの古環境変動やイベントに関わる研究を取り扱う。陸域・海域、時代、手法を問わず幅広い内容の発表を歓迎する。通常の講演に加えて、Anthropoceneに関連する特別企画を設け、今後の古気候研究の方向性を考えていきたい。なお、セッションはJPGU2017におけるA-OS31「近海・縁辺海・沿岸海洋で海洋学と古海洋学の連携を探る」とM-IS23「古気候・古海洋変動」の統合セッションであり、中・長期の気候・環境変動に関連する幅広い研究分野との一層の連携促進を目指している。研究分野の垣根を超え、連合大会ならではの活発な交流の場となることを期待する。

[MIS10-P02]南太平洋ニュージーランド沖堆積物中の中期中新世以降の生物源オパール変化

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The Southern Ocean is known as a high nutrient low chlorophyll (HNLC) region. In HNLC, primary production is not proportional to the supply of macro-nutrients such as nitrate, phosphate and silicate. It is suggested that iron deficiency is the reason. In the ocean other than HNLC, macro-nutrients are the limiting factor for primary production. However, in the Southern Ocean, macro-nutrients are abundantly supplied to the surface layer by upwelling. Therefore, iron, a micro-nutrient, is deficient before macro-nutrient. As a result, iron deficiency is the limiting factor for primary production in the Southern Ocean. Diatom is a phytoplankton with biogenic opal frustules and can be preserved in sediments. Therefore, sedimentary biogenic opal content is used as a proxy for past biological productivity. During Ocean Drilling Program (ODP) Leg 181 in 1998, Site 1123 was drilled in South Pacific off New Zealand (41°S, 171°W, and 3290 m water depth). In this study, biogenic opal contents for the last 10 Myrs were measured on 219 samples of ODP 1123. Biogenic opal was analyzed by extracting with an alkaline solution (2M Na₂CO₃) and molybdenum yellow colorimetric method. Both biogenic opal contents and fluxes were relatively high during late Miocene from 7 to 5 Ma. Alkenone sea surface temperature (SST) and alkane flux records indicated significant cooling with increased dust occurred during this period. These data were consistent with a scenario that an enhanced primary productivity occurred when increased iron supply by dust by expansion of arid regions by intensified cooling. This suggests the studied area near Site ODP 1123 was a HNLC region during 7-5 Ma.