

Temporal and spatial variation of dissolved inorganic carbonates in the summer of Antarctic seasonal sea ice zone

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To clarify the variations of carbonate system in the Southern Ocean, multi-ship observations and line observation which closes ice edge were performed since JARE-51st (2009/10 austral summer) on-board Icebreaker "SHIRASE" and T/V Umitaka-Maru of TUMSAT (Tokyo University of Marine Science and Technology). Although seasonal changes of $p\text{CO}_2$ are attributed to thermodynamics and biological activity, Analysis of DIC vertical profiles reveal that biological uptake and entrainment of sub-surface water played major role and air-sea CO_2 exchange can contribute a little.

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