



The Arctic Ocean is one of the least studied world oceans, yet plays a global role in heat balance and circulation. The joint US/Canadian 1994 Arctic Ocean Section carried out aboard two ice breakers, the CCGS Louis S. St. Laurent and USCGC Polar Sea from July 25 to September 3, 1994 addressed the role of the Arctic in global change. The ships entered the Arctic through the Bering Strait, proceeded across the Makarov Basin to the North Pole, crossed the Eurasian Basin and exited through the Greenland Sea. Papers in this volume cover three major areas: 1. ocean circulation, chemistry and geochemistry, 2. biological communities and production rates, and 3. sedimentary and geological processes. These papers clearly show that the Arctic is a dynamic and changing ocean over both present day and geological time scales, and provide a solid starting point for more refined process studies in the future.

Eddy C. Carmack et al. -- Changes in temperature and tracer distributions within the Arctic Ocean: results from the 1994 Arctic Ocean section -- 1487-1502

J. H. Swift et al. -- Waters of the Makarov and Canada basins -- 1503-1529

Bryce L. Winter, David L. Clark and Clark M. Johnson -- Late Cenozoic Sr isotope evolution of the Arctic Ocean: constraints on water mass exchange with the lower latitude oceans -- 1531-1542

C. K. Guay and K. Kenison Falkner -- Barium as a tracer of Arctic halocline and river waters -- 1543-1569

P. A. Wheeler, J. M. Watkins and R. L. Hansing -- Nutrients, organic carbon and organic nitrogen in the upper water column of the Arctic Ocean: implications for the sources of dissolved organic carbon -- 1571-1592

S. B. Moran, K. M. Ellis and J. N. Smith -- $^{234}\text{Th}/^{238}\text{U}$ disequilibrium in the central Arctic Ocean: implications for particulate organic carbon export -- 1593-1606

Beatrice C. Booth and Rita A. Horner -- Microalgae on the Arctic Ocean Section, 1994: species abundance and biomass -- 1607-1622

Michel Gosselin, Maurice Levasseur, Patricia A. Wheeler, Rita A. Horner and Beatrice C. Booth -- New measurements of phytoplankton and ice algal production in the Arctic Ocean -- 1623-1644

James Rich, Michel Gosselin, Evelyn Sherr, Barry Sherr and David L. Kirchman -- High bacterial production, uptake and concentrations of dissolved organic matter in the Central Arctic Ocean -- 1645-1663

Evelyn B. Sherr, Barry F. Sherr and Lynne Fessenden -- Heterotrophic protists in the Central Arctic Ocean -- 1665-1682

Lisa M. Clough et al. -- Infaunal density, biomass and bioturbation in the sediments of the Arctic Ocean -- 1683-1704

Ray E. Cranston -- Organic carbon burial rates across the Arctic Ocean from the 1994 Arctic Ocean Section expedition -- 1705-1723

Chih-An Huh, Nicklas G. Piasias, James M. Kelley, Tapas C. Maiti and Art Grantz -- Natural radionuclides and plutonium in sediments from the western Arctic Ocean: sedimentation rates and pathways of radionuclides -- 1725-1743

Dennis A. Darby, Jens F. Bischof and Glenn A. Jones -- Radiocarbon chronology of depositional regimes in the western Arctic Ocean -- 1745-1757