

1. Record Nr.	UNINA9910814347903321
Autore	Fieux Michele
Titolo	The planetary ocean // Michele Fieux and Ferris Webster
Pubbl/distr/stampa	Les Ulis : , : EDP Sciences, , [2017] ©2017
Descrizione fisica	1 online resource (564 pages) : illustrations (some color)
Collana	Current Natural Sciences
Classificazione	RZ 10066
Disciplina	551.460072
Soggetti	Oceanography - Research Ocean-atmosphere interaction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- Table of Contents -- Prolog -- Preface to the French Edition -- Acknowledgments -- Introduction -- I. Generalities -- 1 Ocean characteristics -- 2 Heat and water exchanges between ocean and atmosphere -- 3 Water masses -- 4 Ocean circulation -- 5 The role of wind -- 6 Observational techniques -- II. The Antarctic (or Austral) Ocean -- 1 Introduction -- 2 Geographic characteristics -- 3 Atmospheric pressure and winds -- 4 Climatology -- 5 Surface circulation -- 6 Water properties -- 7 Distinctive features of the Antarctic Ocean -- III. The Atlantic Ocean -- 1 Introduction -- 2 Geographic characteristics -- 3 Climatology -- 4 Surface and subsurface circulation -- 5 Adjacent seas -- 6 Water properties -- 7 Water properties of adjacent and epicontinental seas -- 8 Distinctive features of the Atlantic Ocean -- IV. The Indian Ocean -- 1 Introduction -- 2 Geographic characteristics -- 3 Climatology -- 4 Surface circulation -- 5 Water properties -- 6 Distinctive features of the Indian Ocean -- V. The Pacific Ocean -- 1 Introduction -- 2 Geographic characteristics -- 3 Climatology -- 4 Surface circulation -- 5 Water properties -- 6 Distinctive features of the Pacific Ocean -- VI. Conclusions -- 1 Planetary ocean water properties -- 2 Circulation of the planetary ocean -- 3 Thoughts on ocean variability, climatic implications -- References, acronyms, web sites -- Index
Sommario/riassunto	The description of ocean water masses is based on the study of their

temperature, salinity, and density, virtual genetic imprints which provide identity and movement to water masses. Ocean characteristics and processes involved in exchanges with the atmosphere together with simple dynamic balances give an understanding of a large part of the vast oceanic system. This book is enhanced with numerous colored illustrations. It is a reference on regional oceanography updated with extensive results from the last twenty years. The presentation underscores the specificity of each ocean basin using a precise and global approach. Beginning with a brief historical context, it explains the interactions and the role of each ocean basin in the functioning of the planetary ocean. How do we recognize Antarctic Bottom Water in the middle of the Atlantic Ocean? What is the densest water mass? The warmest? Why doesn't dense water form in the largest ocean basin? What becomes of water that sinks in the Labrador Sea? Why does the ocean play such an important role in climate variations? ... Answers can be found in this book. Beyond a course in regional oceanography, the text is aimed at students in all fields of marine and environmental science as well as interested secondary school teachers. It also provides a guide to exploring the «ocean planet» that is comprehensible to any well-informed amateur eager to know the basics.
