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Ocean Circulation and Climate – A 21st Century Perspective
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Second edition.

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Summary

(The following text is part of the book's preface which was written jointly by the four editors.)

This book aims at presenting ocean science and its relevance to climate more than a decade after the first edition of *Ocean Circulation and Climate.*

The achievements attained by the end of WOCE provided an almost entirely physically-focussed "snapshot" of the ocean as documented in the first edition. However, since 2001, there has been progress on a broader front. In part this is due to the significant lengthening of the record of changing ocean properties with the WOCE era observations providing a "state of the ocean in the 1990s" benchmark. The greater maturity and comprehensiveness of the network of ocean observations was founded during WOCE and was subsequently stimulated by the 1999 and 2009 OceanObs conferences, with the second of these having a more interdisciplinary focus. For this new edition of the book, we aimed to have a strong involvement of scientists whose careers developed during and after WOCE. Our authors include a high proportion of younger scientists from the post-WOCE generation.

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This second edition of *Ocean Circulation and Climate* leads the reader through the important areas of progress since the first edition. It is composed of six Parts each prefaced by a short introduction. The reader is initiated in the ocean's role in climate by Part I and by the introductions to the following Parts. While the book focuses on ocean physics, we have also included related paleoclimatic findings, and descriptions of biogeochemical processes, marine ecosystems and the carbon cycle. There are inevitable overlaps between chapters and cross-references are inserted where appropriate. Production of the book ran in parallel with the preparation of the IPCC AR5 for which this book provides an ocean-focused complement addressing the underpinning scientific issues.

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