PREFACE

Progress in a wide range of ocean research and applications depends upon the prompt and dependable availability of ocean information products. The field of physical oceanography has matured to a point where it is now conceivable to combine numerical models and observations via data assimilation in order to provide ocean prediction products on various spatial and time scales. As a result, many nations have begun large-scale efforts to provide routine products to the oceanographic community. The Global Ocean Data Assimilation Experiment (GODAE) provides a framework for these efforts, i.e., a global system of observations, communications, modeling, and assimilation that will deliver regular, comprehensive information on the state of the oceans, in a way that will promote and engender wide utility and availability of this resource for maximum benefit to the community. The societal benefit will be an increased knowledge of the marine environment and ocean climate, predictive skills for societal, industrial, and commercial benefit and tactical and strategic advantage, as well as the provision of a comprehensive and integrated approach to the oceans.

We therefore considered it timely, given the international context, to bring together leading scientists to summarize our present knowledge in ocean modeling, ocean observing systems, and data assimilation to present an integrated view of oceanography and to introduce young scientists to the current state of the field and to a wide range of applications. This book is the end result of an international summer school held in 2004 that aimed, among other things, at forming and motivating the young scientists and professionals that will be the principal movers and users of operational oceanographic outputs in the next 10 years. The chapters collected in this volume cover a wide range of topics and are authored not only by scientists, but also by system developers and application providers.

We would like to thank all the speakers for providing a stimulating series of lectures at this GODAE Summer School. We also express our appreciation to the members of the scientific committee and to the GODAE IGST who contributed in numerous ways to the success of the school. We thank all the attendees (see list in Appendix) for participating actively in the lecture review process and for creating a most cordial atmosphere. We thank Jean-Michel Brankart, Laurence Crosnier, Nicolas Ferry, and David Rozier for preparing and putting together a superb set of student exercises. Finally, our thanks go to Yves Ménard, Joëlle Guinle, Véronique Huix, Nicole Bellefond, and Josiane Brasseur who spent a considerable time with the logistics of the school before and after. A special thank goes to Josiane Brasseur for her help in formatting the manuscripts.

Eric P. Chassignet
Jacques Verron

April 15, 2005