

## FOREWORD

Wind waves strongly affect all kinds of maritime activities, and their worst effects usually come from the highest waves. The Eleventh Session of the WMO Commission for Marine Meteorology noted the need for maritime service providers to have the capability of predicting in real-time and estimating parameters of the highest wind waves. In response to this requirement a technical paper [Boukhanovsky A.V. et al, 1998] was published by the WMO. It deals with the evaluation of the highest wave  $h_{max}$  for short periods of time (approximately 1-3 hours long when the wave field can be considered as a quasi-stationary process), and for a single storm, which can be from one to several days long. The basic purpose of methods considered in that paper is the actual prediction of the highest wave range in a storm.

The current publication continues the analysis of methods available for the evaluation of the  $h_{max}$  for longer time periods. It extends the time scale of applications for a series of storms and also considers wave heights of long return period. Such estimates are of crucial value for offshore design and real-time support of corresponding operations. Of course, this is not the only publication, which has been written on this subject. There are many good papers and books. A recent publication on

methods available for analysis of wave climate and long return period waves can be found, for example, in the WMO Guide to Wave Analysis and Forecasting (1998), see chapter 9 and Annex III edited by D. Carter and V. Swail. That chapter contains references to many other useful publications.

In the review we did not address such highly important areas of activities as wind/wave observations, data assimilation, numerical modelling, or accurate reconstruction of the wind field for individual cases of the most severe storms. Significant progress has been recently reported in all of these areas. The purpose of this review is to informally complement the WMO guide and other existing publications with an analysis of the methods available for statistical data processing aimed at the estimation of extreme wave parameters. Also, an attempt is made to highlight some results of studies available in the literature of Eastern Europe, which apparently have not received sufficient consideration by the global reader. The scope of the methods described in the review reflects to some extent the preferences and experience of the authors, which have been developed in the course of the thorny process of servicing the offshore industry.

---oooOooo---

---