

Preface

This issue of the *Estonian Journal of Earth Sciences* is dedicated to the Seventh Workshop on Baltic Sea Ice Climate, held in Tallinn on 8–11 August 2011. Such meetings have taken place every third year since 1993, when Dr Jari Haapala and Prof. Matti Leppäranta of the Department of Geophysics of the University of Helsinki organized the first workshop at the Tvärminne Zoological Station. The objective was to assemble sea ice scientists working on topics related to climate variability and Baltic Sea ice conditions. An overview of the history of the workshops is available in the paper Leppäranta, M. 2011. History of Baltic Sea ice climate workshops. In *Baltic Sea Ice Services* (Kirchhoff, M., ed.), (BSH Rostock/Germany) Bundesamt für Seeschifffahrt und Hydrographie (BSH), http://www.bsis-ice.de/BSIC/BSIC_history.pdf. The first workshop was the largest, bringing together 36 scientists from 8 countries. Scientists from Finland, Estonia, Germany and Poland have taken part in all meetings, along with frequent attendance by researchers from Sweden and Russia. The 2011 Tallinn workshop had 22 participants from 6 countries: Estonia (11), Finland (4), Poland (3), Germany (2), Russia (1) and Latvia (1).

Various aspects and characteristics of ice cover, concerning not only the Baltic Sea but also lakes in the Baltic Sea drainage basin, have been discussed in Baltic Sea Ice Climate Workshops. Results of the study of ice dynamics, modelling, structure and other physical characteristics, biology, interaction with other environments, and climatological ice time series have been presented.

The seventh workshop was organized by the present author in the Marine Systems Institute at Tallinn University of Technology. The topics of the workshop were climatological ice time series and models; sea ice dynamics: models, engineering, ice breaking, accidents, human life; structure and ecology of ice and under the ice: freezing, melting, transmittance, living; ice–land, ice–ocean and ice–atmosphere interaction. All together 14 presentations were held in two sessions, the first one in the Institute and the second in Naissaar Island lying

in Tallinn Bay 15 km north of the city. In the final discussions two major topics were brought in: (1) new analysis of climatological ice time series to update their statistical properties up to the last winter; in particular this information is needed for the next edition of the BACC (BALTEX Assessment of Climate Change for the Baltic Sea Basin) book next year; (2) a critical need for ice thickness data for modelling, remote sensing and operational monitoring.

Selected presentations of the workshop, shedding light on land–ice interaction (Matti Leppäranta), ice deformations (Ove Pärn and Jari Haapala), long-term variability of ice cover of some Karelian lakes (Roman Zdrovennov et al. and Tatiana Efremova et al.) and on the wave hindcast (Ülo Suursaar), are published in this issue. The paper by Matti Leppäranta ‘Land–ice interaction in the Baltic Sea’ opens a new point of view on the effect of ice action on the human element, often reflected in the common press but much less in scientific issues. The paper by Ove Pärn and Jari Haapala ‘Ice deformation in the Gulf of Finland in the severe winter of 2002/03’ demonstrates a possibility of calculating ice conditions in the sea and forecasting the best fairways through the drift ice. The next three papers – ‘Inter-annual variability of ice and snow cover of a small shallow lake’ by Roman Zdrovennov et al., ‘Long-term characteristics of ice phenology in Karelian lakes’ by Tatiana Efremova et al. and ‘Locally calibrated wave hindcasts in the Estonian coastal sea in 1966–2011’ by Ülo Suursaar – describe effects of inter-annual climate variations in the Baltic Sea region. The calculated hindcast trends enable also a certain forecasting for further periods.

The eighth workshop will be held in the University of Szczecin, Poland, in 2014. I would like to thank Mrs Sirje Träel and Mr Fred Buschmann for the practical help with carrying out the sessions and social events of the seventh, Tallinn workshop and all contributors to this special issue.

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Guest editor