Development of Oceanographic Radar Networks, Data Management and Applications in Asia and Oceania Countries

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Guest Editors of Special Issue

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Oceanographic radar systems are unique in providing near real-time two dimensional maps of densely distributed (0.3–6 km grid) surface currents and wave characteristics over a large region of the coastal ocean extending about 200 km from the shoreline, and can operate under any weather conditions. Oceanographic radars are extremely valuable for marine ecological, economic, and safety applications; ship navigation, oil spill prediction, search and rescue, harmful algal bloom forecasting and tsunami detection and warning, as well as coastal sea surface circulation studies and forecast.

Demands for densely sampled near real-time surface current data have increased in Asian countries with increasing

maritime transportation, fishery activities, coastal zone usages and pollutions, and ocean leisure activities. However, data production from the radar requires high tech engineering because the radio-wave environment, operational skill and maintenance of the radar system and data management may affect data quality and quantity. Despite more than 110 oceanographic radars are presently operating in Asia and Oceania country's coast line, there have been few oceanographic radar conferences among the Asian radar communities to address frequency sharing, operation and maintenance, data verification and gap filling as well as the results of research and application.

Picture 1. Group photo of participants in the first Ocean Radar Conference for Asia (ORCA) held on May 17–18, 2012 in Seoul, Korea

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To share experiences on oceanographic radar network planning, operation, maintenance, and data management, exchange ideas about applications and research results, and discuss issues that are common to all operators and end-users in Asian countries, the first Ocean Radar Conference for Asia (ORCA) was held on May 17-18, 2012 in Seoul, Korea by Korea Ocean Radar Forum (KORF, <http://korf.kunsan.ac.kr/xs/>). More than 70 persons participated from Australia, China, Indonesia, Japan, Korea, Russia, Taiwan, Thailand, USA, and Vietnam (Picture 1) and 29 papers were presented in the meeting. The attendees agreed to open the conference every two years and agreed to aim for a special issue of a peer reviewed scientific journal with a selection of presentations from the conference.

This special edition includes one overview and four contributed articles by participants, who presented in the

first ORCA meeting. The papers in this Special Issue include oceanographic radar networks on some countries, studies on error and resolution estimation of the radar-derived current data, and the results of scientific research and application for Asia and Oceania seas. We sincerely hope that this special edition may help foster the development and growth of oceanographic radar observation networks along the Asia and Oceania seas.

Lastly, we would like to deeply thank OSJ for accepting the issue of this special edition as well as sponsors of the ORCA meeting: Korea Hydrographic and Oceanographic Administration; Korea Ocean Research and Development Institute; Research Institute of Oceanography, Seoul National University; Saemangeum Marine Environmental Research Team (BK21), Kunsan National University; Oceantech, Co. Ltd; Marine Information Technology, Co.; CODAR Ocean Sensors.