

Hydrographic Society of Korea 2020 Online Academic Conference

Date: Friday 19 June 2020 13:30 Venue: KHOA & Online Organized by: Hydrographic Society of Korea
Sponsored by: Korea Hydrographic and Oceanographic Agency, KIRA Korea Hydrography and Research Association,
AODC Association of Ocean Research and Development Consultation

Academic Conference celebrating World Hydrography Day

22 June 2020

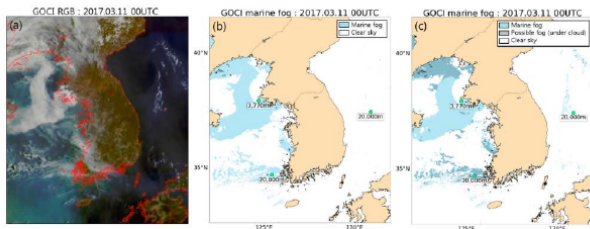
An Academic Conference in celebration of World Hydrography Day (21 June) was held on 19 June 2020 with a theme “Post COVID-19, Ways Forward for Hydrography in Korea” both at the Korea Hydrographic and Oceanographic Agency (KHOA), Busan, Republic of Korea and live streaming, organized by the Hydrographic Society of Korea and sponsored by KHOA, Korea Hydrography and Research Association, and Association of Ocean Research and Development Consultation. It saw a participation of 220 people on live streaming and 50 physically present at the Conference. Nine presentations were made and the table on the next page shows their summary.



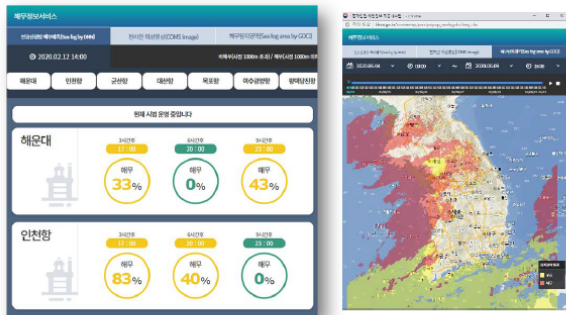
Presentations at the Conference

Title	Presenter	Key points
A hundred years of the International Hydrographic Organization (IHO) and our role	Mr Junho Jin, Korea Hydrography and Research Association & Dr Eunmi Chang, Ziin Consulting	The history, role and organization of the IHO and the history of Korean involvement at the IHO
Artificial intelligence and satellite applications for ocean environment	Dr Jungho Im, School of Urban and Environmental Engineering, Ulsan National Institute of Science and Technology	The concept of AI and its ocean applications with a focus on satellite data
The status and future of hydrographic R&D	Prof JaeMyung Kim, Seokyeong University	The status of R&D of KHOA in 2020 and efforts to secure budget for 2021; localization of proprietary technology for mapping marine information
Looking back at 10 years of hydrography in Korea	Prof Jongseong Ryu, Anyang University; Prof Jong Seong Khim, Seoul National University	Evaluation of hydrographic activities in Korea for the last 10 years; proposals for future directions
Drafting enforcement decree and rule of the Hydrographic Act and setting the 5-year Basic Hydrographic Plan	Dr Minchol Chang, Korea Hydrographic and Oceanographic Agency	Key contents of the newly enacted Hydrographic Act and its enforcement decree and rule; evaluation of the 2011-15 and 2016-20 Basic Hydrographic Plans and the timeline for setting the 2021-25 Plan
Future directions of hydrography	Prof Jae-Hun Park & Ho Kyung Ha, Inha University	Reduced demand in hydrographic vessels leads to unmanned and autonomous ocean observation and a Korean Ocean Observation Initiative is proposed.

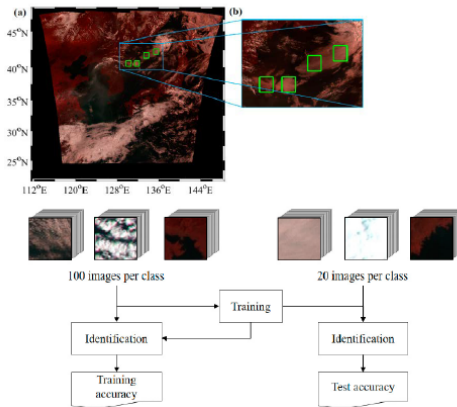
Sea Fog Detection and Forecasting



Decision Tree-based Sea Fog Detection Using Geostationary Ocean Color Imager Data (Kim et al., 2020)



Real time sea fog detection and forecasting system (Korea Hydrographic and Oceanographic Agency)



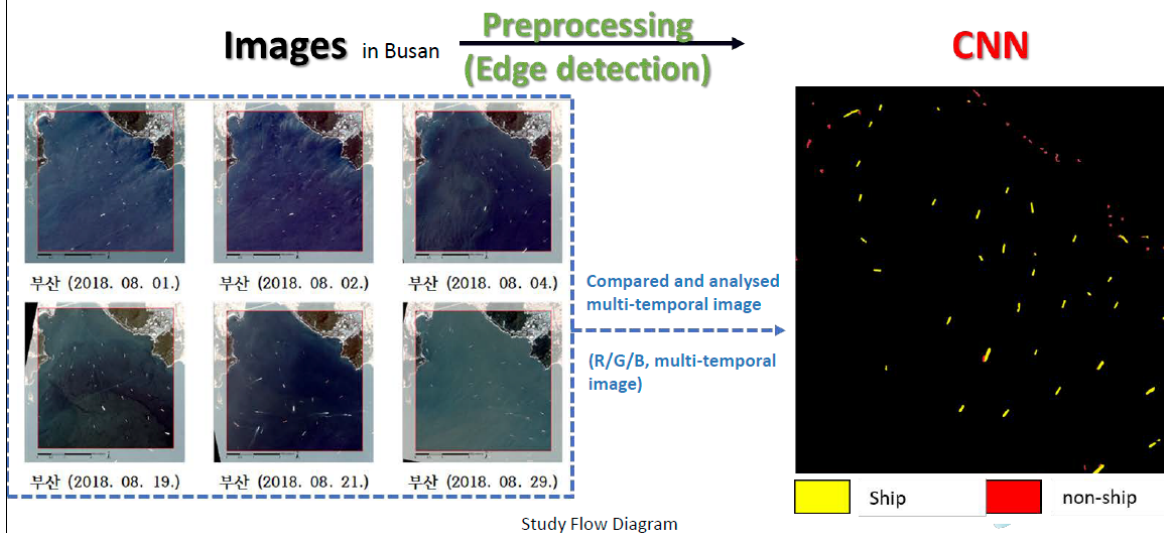
Convolutional Neural Network-based Marine Fog Detection Using Geostationary Ocean Color Imager Data (Jeon et al., 2020)



In the presentation *Artificial Intelligence and Satellite Applications for Ocean Environment* by Dr Jungho Im

Ship Detection

- Ship detection using micro satellite data and deep learning approaches
 - Palisade satellite data
 - Edge detection + Convolutional Neural Networks



Study Flow Diagram

Physical Ocean Observations

◆ Changes to Korea Ocean Observing Network

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Tidal station	48	47	50	50	50	50	50	50	51	51
Ocean station	7	6	6	6	4	3	3	3	3	3
Ocean buoy	16	25	25	27	29	30	31	32	33	33
HF-radar	5	6	8	26	33	40	44	44	44	44
Ocean research Station	1	1	1	1	1	3	3	3	3	3
Total	77	85	90	110	117	126	131	132	134	134



(as of May 2020)

77 networks in 2011 → 136 in 2020: Almost doubled
Rapid increase in the no. of ocean buoys and HF-radars

In the presentation *Looking back at 10 years of hydrography in Korea* by Prof Jongseong Ryu & Jong Seong Khim