Experimental cruise for sea spray generation in MR18-05C

Ryo Kusakawa[1], Shuichi Fushimi[1], Toshihiro Ozeki[2], Hajime Yamaguchi[1] and Jun Inoue[3]
[1]*Graduate School of Frontier Sciences, The University of Tokyo, Japan*
[2]*Sapporo Campus, Hokkaido University of Education, Japan*
[3] National Institute of Polar Research, Japan

Vessel icing is one of the severe problems navigating in cold regions. Vessel icing can cause several problems such as decline in operation efficiency, a malfunction of deck equipment, increasing the risk of crew falling into water, loss of ship stability. It is well known that the main cause of vessel icing is sea water spray generated by collision of vessel and wave (Zakrzewski,1987). In order to predict and prevent these problems, statistical approach or numerical simulation have been done (Samuelsen,2018). However, it is said that the mechanism of sea spray generation still remains a research problem and that need for more field observations of sea spray formation and icing for all types of vessels. In this poster, we introduce our sea spray observation method and the analysis results of acquired data and experimental cruise. We measured the amount of sea water spray with two instrument, spray particle counter (SPC) and marine rain gauge type spray gauge (MRS) [4] during MR18-05C cruise. And the experimental cruise for generating spray is conducted to draw a hexagon based on true wind degree (Figure. 1). From the result of this cruise, we can say that there is possibility to prevent severe vessel icing by adjusting vessel direction (Figure. 2). These data and results will contribute on the development of new prediction models of vessel icing.

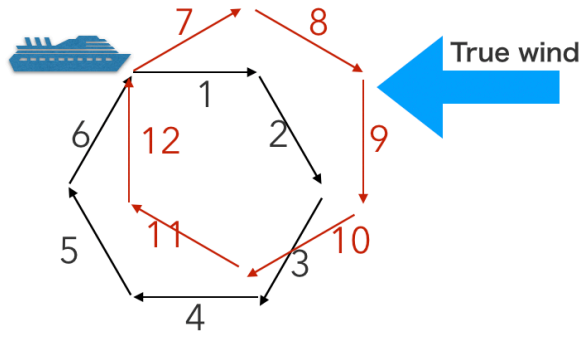

Figure. 1 Experimental cruise situation

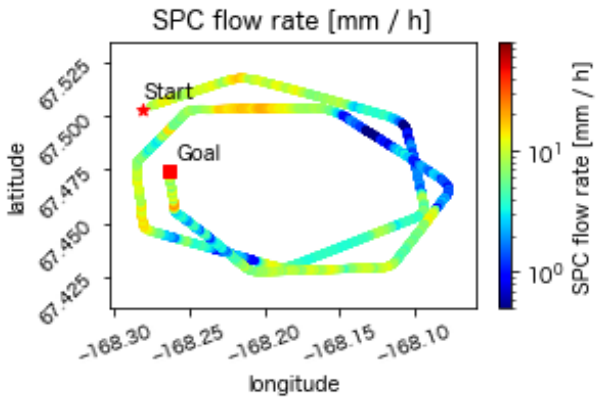

Figure. 2 Result of experimental cruise

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