

## Improvement of database system of research vessel operation information and causal analysis of past cruise downtime

\*Yasuko Yamagishi<sup>1</sup>, Ken Yatsu<sup>1</sup>, Kazuhiko Kashiwase<sup>1</sup>, Tetsuji Maki<sup>1</sup>, Hide Sakaguchi<sup>1</sup>

1. Japan Agency for Marine-Earth Science and Technology

Over the last 10 years, the ship time of JAMSTEC (Japan Agency for Marine-Earth Science and Technology) research vessels has been reduced drastically. It is simply due to a decrease in the number of vessels and the budget for research cruises. However under such situation, managing section of research cruise in JAMSTEC needs to plan the most optimal cruise to carry out the necessary oceanic observations. At present, JAMSTEC has to plan all research cruises for next fiscal year one year before. In order to provide useful information when planning future research cruise, we started to compile research vessel operation information of past cruises and to estimate downtime of them. Downtime is the period during which the observations and/or cruise are interrupted due to bad weather, troubles of observation equipments, or other causes, and is one of the important indicators to judge whether the cruise successfully carried out or not. Our project started in FY 2016, and we developed database system of research vessel operation information. This database can provide the downtime of the research cruises from FY 2008 to present. We have improved the database system to estimate more accurate downtime and to add needed new data, e.g., research sea area, kinds of observations, and so on for causal analysis of the downtime. In this study, we analyze the new downtime data of past research cruise. We will show the trend of the downtime and search the factors that have the most impact on the downtime. We think that this developed database system and the results of the causal analysis of the downtime of the past cruises enable to provide useful information for the planning of the future cruises. Acknowledgments: we are grateful to Mr. Morisaki and Ms. Sada for their supports to make data stored into the database system.