2019

OCEAN COLLEGE, ZHEJIANG UNIVERSITY

TRAINING REPORT

Training report about regional Marine observation and quality control at Regional training Center Tianjin Organize by Ocean Teacher Global Academy, National Center of Ocean and Metrology (NCOSM) and National Marine Data and Information Service subordinate to Ministry of Natural Resources, China from 25 th – 28 th March, 2019

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PHYSICAL OCEANOGRAPHY

INTRODUCTION:

- **Background**

This training course is based on Marine observation and quality control at Regional training Center Tianjin Organize by Ocean Teacher Global Academy (OTGA), National Center of Ocean and Metrology (NCOSM) and National Marine Data and Information Service subordinate to Ministry of Natural Resources, China from 25 th – 28 th March, 2019.

- **Training Objective**

Aim of this training to provide ocean international standards, practices and services.

- Translating Chinese marine standards.
- Standard application and standard formulation.
- Promote the ocean best practices.
- Share different country standard and practices.

FIRST DAY

In first day, they told about Global ocean observing system (GOOS). It utilizes the Framework for Ocean Observing to guide its implementation of an integrated and sustained ocean observing system. This systems approach, designed to be flexible and to adapt to evolving scientific, technological and societal needs, helps deliver an ocean observing system with maximized user base and societal impacts.

SECOND DAY

Second day, I learn conductivity-temperature-depth (CTD) observation, managing and visualizing data and data processing and quality control observation. The Conductivity, Temperature, and Depth (CTD) sensor is one of the most used instruments in the Oceanographic field. These devices are the number one, most important sensor for any research of the ocean depths. CTD measurements are found in every marine related institute and navy throughout the world because they are used to produce the salinity profile for the area of the ocean under investigation.

Each component of the CTD takes different measurements, and these measurements are often processed through computer software to create specific parameters. For example, the CTD will take a measure of conductivity, temperature and pressure, and process these into a measure of salinity. All variables are available to researchers, should they want to work with raw data or use the measurements for other purposes. CTDs can be cast from the side of a ship to create a vertical profile (variable vs. depth) or fixed at a specific depth to create a horizontal profile (variable vs. time), depending on which measurements the researcher wants to collect.

THIRD DAY

Third day, talking about different instrument about CTD sensor like sea-bird, RBR sensor and optical technology and also learn characteristics, calibrations factors, data correction QC

methods Sea-bird Profiling CTD measures water parameters as it travels through the water, whether lowered over the side of a ship with a winch to take measurements of a vertical column of water or integrated with an autonomous vehicle or glider. Common to all Sea-Bird Profiling CTD.

- Purposeful designs built to perform under the unique dynamic conditions found on varying measurement platforms.
- Pumped and ducted constant flow for matched temperature and conductivity response
- Measurements are made on the same sample of water with a predictable delay and predictable flow effects
- Aligning and coordinating measurements done with software or (for some models) automatically

FOURTH DAY

Last day, learn about best practices and standards and CTD calibration in NCOSM and Chinese standard seawater and field trip. In field trip we went NCOSM labs and learn about different instruments and there best practices some pictures are below

CONCLUSION

Frist, I thanks to international school (ocean college) to give us oppurtunity to attend training course, this training course is good for our preseant and future reseach and basically according to my point of view this traing is base on for Ocean Observing to guide its implementation of an integrated and sustained ocean observing system and to adapt to evolving scientific, technological and societal needs, helps deliver an ocean observing system with maximized user base and societal impacts.