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Parameter Identification and Validation for Online Monitoring of Ballast Water Treatment Systems.

ABSTRACT - Masterthesis

Water has been used as ballast to stabilize vessels at sea since the introduction of steel hulled vessels around 120 years ago. While this practice is essential for safe and efficient shipping operations, it possess serious ecological and economical problems. For example, annually \$ 200 million are spent to control the non-native species borne in the ballast or hulls of ship in the Great Lakes Region.

The transfer of alien species with the ballast water causes imbalance in the ecosystem. The impact of these problems has led the individual nations and the International organization to take up this issue. Different government regulations for environment protection have been passed by the nations. These changes in political regimes has an effect on marine industry. A ballast water treatment system is a way to reduce these introductions of species in foreign waters. At present around 70 such treatment systems are already making their way in the market. In order to ensure the capability of these treatment systems and to validate if the defined standard has been acquired, an online monitoring method will be necessary in the near future. This document deals with some ideas of the probable monitoring parameters and their feasibility test by a real time test setup applicable for the treated ballast water.