Contribution ID: **100** Type: **Paper**

Energy saving devices: a retrofit stern flap solutions on the ”De La Penne” Destroyer Class (Numerical analysis and experimental tests)

Thursday, 16 June 2022 11:10 (20 minutes)

It is well known that during the life-cycle the growth of the shipweight is one of the main source of the performance loss. Stern flaps have been used in many recent designs of transom stern vessels, in particular by the US Navy, to increase top speed or to realize improvements in fuel economy over the operating range. Furthermore, stern flap implementation has also become a practical retrofit on existing platform because significant improvements can be achieved at minimal cost.
Ship Design Office of the Italian Navy General Staff performed a preliminary evaluation of the application of this device on own Destroyer hull (De La Penne Class), using the CFD U-RANSE approach and through experimental test campaign performer at Model Basin of CNR-INM (Council of National Research – Institute of Marine Engineering).
This preliminary study was conducted in model and full scale: several flap angles have been tested with a fixed NACA profile. The results have shown that the major improvements, in terms of power reduction, have been obtained for the operative speed range between Fr=0.335 and 0.419.

Primary authors: BASILE, Vincenzo (Italian Navy); MANCINI, Simone (Università Federico II di Napoli); Mr DE BIASE, Mario (Italian Navy)

Presenter: BASILE, Vincenzo (Italian Navy)

Session Classification: 4C

Track Classification: Experimental hydrodynamics