

NEAR WALL TURBULENCE ON SHIP HULLS

RICKARD E. BENSOW*

*Chalmers University of Technology, 412 96 Gothenburg, Sweden
rickard.bensow@chalmers.s

ABSTRACT

The flow around a ship hull is dominated by the developing boundary layer, which is influenced by the pressure gradient occurring over the bow and stern, and by the hull surface quality and characteristics. In general, the hull boundary layer drag is responsible for more than 50% of the total resistance, decreasing with increasing speed, thus being a paramount design parameter to consider. Further, predicting the resulting wake with high accuracy is crucial for the design of an efficient propulsion system. Improved knowledge of the boundary layer physics, in particular for developing boundary layers subjected to longitudinal pressure gradients and surface roughness, and the tools used to measure and predict them, is vital to our continuous strive to develop more efficient and environmentally-friendly ships. This invited session aims to bring together experts in different aspects of boundary layer flow physics and modelling to share the knowledge of boundary layer flow physics and to exploit the possibilities of improving our understanding of boundary layers around ship hulls in order to develop more efficient hull forms.