



Safety of the navigation in congested maritime area. The case of the Messina strait

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Abstract

In the last decade a relevant expansion of traffic by sea occurred, not only on the long distances, but also on the middle-short distances; on coastline urban areas and particularly on neighboring urban areas, but separated by the sea, the increase of the flows often involves greater risks of accident for the navigation (Lewison, 1978; Merrick et al., 2001; van Dorp et al., 2001). The risk of maritime accident results particularly high for the ro-ro ships. This papers clarify some aspects concerning the concept of risk and safety at sea dealing with some literature models. An application is proposed to the Messina Strait context that is the crossroad of elevated flows of traffic along two directions. The navigation safety in the Messina Strait has been analyzed with the support of a micro-simulation approach.

Keywords: Risk; Safety; Micro-simulation.

1. Introduction

In the last decade a relevant expansion of the traffic by sea occurred, not only on the long distances, but also on the middle-short distances; on coastline urban areas and particularly on neighboring urban areas, but separated by the sea, the increase of the flows often involves greater risks of accident for the navigation (Lewison, 1978; Merrick et al., 2001; van Dorp et al., 2001).

An accident can be defined as an undesirable event that provokes damages to humans, to goods and to the environment; the main factors that can determine an accident are:

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