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Flanders Hydraulics Research | Flanders State of the Art

KNOWLEDGE CENTRE MANOEUVRING
IN SHALLOW AND CONFINED WATER

This is the 37th newsletter of the *Knowledge Centre Manoeuvring in Shallow and Confined Water*, which aims to consolidate, extend and disseminate knowledge on the behaviour of ships in shallow and confined water. In this newsletter, we discuss ongoing research that aims at better representing waves, currents, tides and wind in ship manoeuvring simulators.

We wish you a Merry Christmas and a Happy New Year.

Researchers associated with the Knowledge Centre are carrying out a study commissioned by Flanders Hydraulics Reasearch to determine the optimal way of representing waves, currents, tides and wind in ship manoeuvring simulators. In order to investigate the current state of the art of hydro/meteo modelling in ship simulators, a questionnaire was sent to a selected list of approximately 30 simulator developers and end users. The explicit aim of the questionnaire was the collection of information to be publicly summarized in the form of a scientific publication. The answers from 12 institutes that replied were collected and analysed.

The results of the survey outline some common approaches as well as some consistent differences in how hydro/meteo conditions and their effects on ship behaviour are modelled by different institutes. Currents, for example, can be based on different kinds of data and then be implemented in various ways. As such, a particular institute can have several options to implement current. Another example is wave effects. Among the ten institutes which can implement waves in simulations, different techniques are used. The information will be summarized in a paper, which could benefit the whole community of users and developers of ship manoeuvring simulators by raising awareness of the present common practices.

The survey represents a first step towards a more scientific approach to the modelling of hydro/meteo conditions in ship manoeuvring simulators and could be a possible starting point for collaborations aimed at making ship manoeuvring simulations even more realistic.
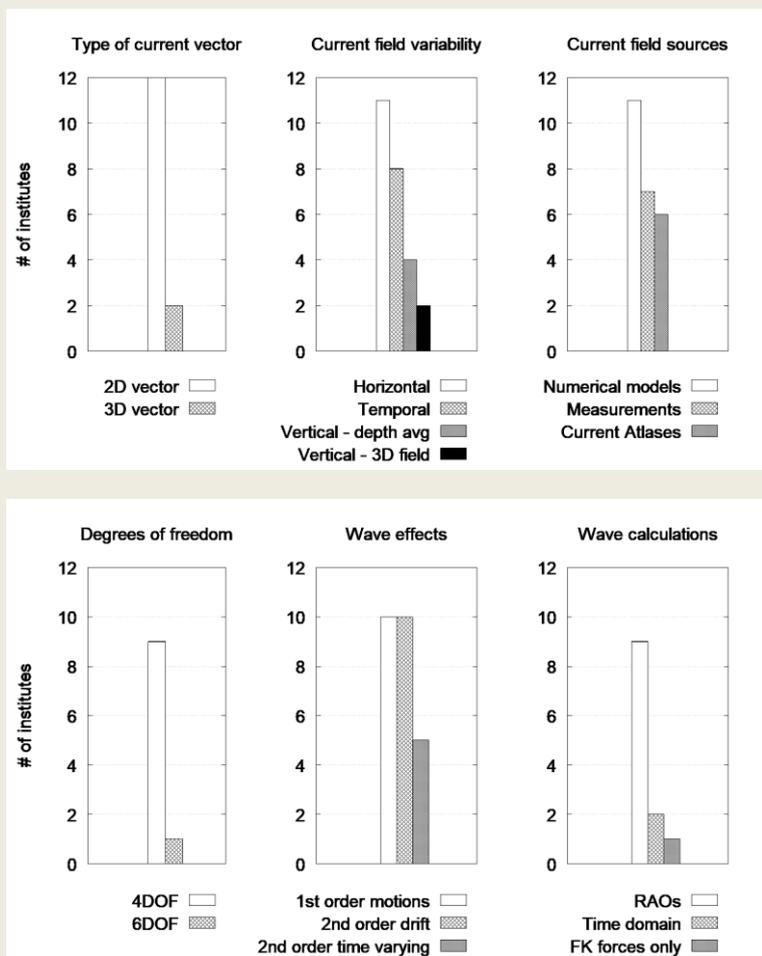
Autonomous navigation is a hot topic and rapidly evolving by making use of the newest technological developments, for example in artificial intelligence and sensor technology. With its extensive network of inland waterways, Flanders has many assets to roll out autonomous navigation and in order to make the most of these assets, a platform "Flanders on the Automated Shipping Track" (FLOAT) has been launched in order to bring together the port authorities, the government and research institutions. Marc Vantorre and Katrien Eloot were present at the launch in Leuven on 1 October 2018.

Researchers associated with the Knowledge Centre recently published:

- Tello Ruiz, M.; Mansuy, M.; Delefortrie, G.; Vantorre, M. (2019) Modelling the manoeuvring behaviour of an ULCS in coastal waves. Ocean Engineering, 172, pp. 219-233.

With the more than 60 abstracts that have been accepted for the 5th MASHCON conference, which will be held in Ostend, Belgium, on 19 – 23 May 2019, the conference is set for an interesting and wide ranging program. The conference will pay special attention to manoeuvring in waves, wind and current and this will be covered from various points of view. The validations of numerical computations will be presented by researchers who made use of the open access experimental benchmark data for validating numerical codes. Other researchers will present experimental data and full scale measurements. In addition, other topics related to ship manoeuvring in shallow and confined water will be discussed.
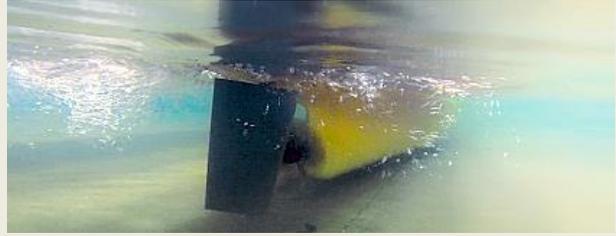
The registration fees can be consulted on the conference website, which links to a secure online registration system.

www.shallowwater.be