

Studies on Tow Forces of Tugboat in Regular Head Waves —Ship Model Experiment—

Seong-Su LEE & Yoshiyuki SAKAI

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Kobe University

5-1-1, Fukae-minami-machi, Higashi-nada, Kobe, Japan, 658-0022

lss@maritime.kobe-u.ac.jp

SUMMARY

The tow force of tugboat is brought through the bollard pull test that is executed under the condition of still water and no forward speed. This is only information relating to towing works, which is offered to tugboat operator and pilot. However, since tugboat always works in waves and with forward speed, it is needed to know practical the tow force in waves. But the characteristics of tow force in waves have not been studied in series.

In our studies, the characteristics of the tow force in regular head waves are examined by water tank experiment using ship models. To make clear the above characteristics, we divide the directly measured tow force into two components, namely the mean tow force T_m and the fluctuating tow force amplitude T_a . And influences such as the elevation of towline, wavelength, wave height, forward speed on the above analyzed T_m and T_a are revealed. The information on the characteristics of T_m and T_a in waves will become useful data for planning navigation and checking for strength of towline.

REFERENCES

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