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Automatic Control of Winch for Mooring

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Summary: Recently, in domestic shipping, a shortage of crew members resulting from the severe labor environment and the aging of members are serious problems, and there is concern about stable transportation becoming difficult because of this. The hiring of younger crew members by improving the labor environment and reducing the labor load is therefore an important target. The automatic mooring is one means of mitigating the labor load of standby operations. If the shift of the mooring tension induced by tide level change and the draft change while loading can be prevented, and moreover, if the hull position can be kept automatic within the allowable limit, the labor load can be reduced. In this research, a simulator which calculates mooring tensions and ship motions was built first, and calculation accuracy was checked by model experiments. The controller was then designed using the simulator and the performance was verified by tank tests. Successful results are shown.

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