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Graphic Mapping the Robust Absolute Stability Boundaries of a Marine Mobile Object Control System

Abstract: The work studies the stages of obtaining the parameters of the proportional-integral-differential (PID) regulators ensuring the stability of the marine mobile object movement for two types of movement (ballast movement and loaded movement). The graphical method used for mapping the trajectories of roots of the resulting interval system on a complex plane has visually demonstrated the robust absolute stability of the ship automation and control system. The Matlab/Simulink system has been used to conduct the research.