MOTION, STABILITY, AND RESISTANCE ANALYSIS OF TRIMARAN DUE TO SIDE-HULL POSITION CHANGE

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Abstract

The development of water transportation route are become greater and spreading to inland territory such river and archipelago. For those transportation region, it’s need a fast and wide cargo capacity water transportation unit with small draught, and those needed could be filled by trimaran. Trimaran is one kind of multi-hull that using three hull, one main-hull (AVA), and two side-hull (AMA). Position change of side-hull is very affecting in trimaran hidrodinamic ability. This research head for analysing motion, stability, and resistance of trimaran due to longitudinal and lateral side-hull position change. Maxurf 11.12 and Moses 7.0 software is used for modelling the trimaran. Motion, Stability, and Resistance analysis is done using Maxurf Hidromax 11.12, Maxurf Hull-Speed 11.12, and Moses 6.0 software respectively. From the analysis known that side-hull position change is very affecting the amount of maximum righting arm and angle of maximum righting arm. From resistance analysis result, known that side-hull position change and speed range are very affecting the trimaran resistance for each konfiguration. From motion analysis result, using average of 1/3 highest motion statistic data, known that trimaran konfiguration effect is complexly affect the trimaran motion. By grouping the highest motion for each model at every speed, the effect of longitudinal and lateral side-hull position change are knowable

Key Word: Trimaran, side-hull, resistance, stability, motion, Maxurf, MOSES