

AN IMPULSE TO A SYSTEM FOR VAGUE MODELLING OF SHIP HULLS

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ABSTRACT

Re-design of the shape of ship hulls has a long tradition. Already for decades methods are applied for the distortion of parent hullforms, which results in a modified daughter hull. However, this conventional approach is only applicable to a limited number of pre-defined numerical shape properties. In this paper it is investigated how the re-design process can be made more flexible, and how naval architectural rules and notions can be incorporated, with the aid of a Vague Modelling Method. Initially, it is argued that an interval model would satisfy the needs for this particular application. Important constituents in interval modelling are the boundaries of the vague model. These are generated with conventional hull distortion, so our interval method application partially reflects that traditional solution. One step further is to combine the vague modelling method, a B-rep based shape model and the hullform distortion method into a Vague Solid Trajectories Model (VSTM), which does not require an interval. In order to derive a single nominal shape from the vague model, specific naval architectural rules must be identified. Possible candidates are discussed, as well as an experimental software implementation of the described system. Finally, examples of a shape designed with the proposed system are presented and discussed.