

TECH BRIEF

SHIP HULL DESIGN

CAESES® is the leading software for naval architects to conduct CFD-driven hull optimization. It allows you to conduct fast and automated studies with a smarter geometry model, to find the optimal ship hull form in days instead of weeks!

The focus of CAESES® is on the underwater part: Create a variable hull model, connect your CFD package and run large design studies and optimizations. Outperform your competitors in the market with a massively optimized hull design!

CAESES® is used by all leading ship design offices and ship yards in the world, such as Daewoo Shipbuilding & Marine Engineering (DSME), Hyundai Heavy Industries and Samsung Heavy Industries. In Germany, HSVA, TKMS and Meyer are using CAESES®, to name a few.

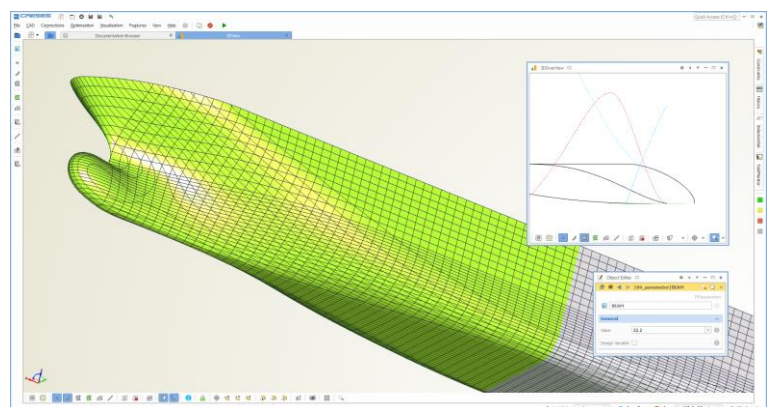
INTELLIGENT HULL DESIGN

Set up a variable geometry while building all your design constraints into the parametric model. Besides pure geometric shape controls, consider e.g.

- Displacement
- Center of buoyancy
- Hard points etc.

The integrated hydrostatic calculation can be coupled to the hull generation process for keeping track of these controls, or to use them as input.

With this, you generate and analyze only feasible designs during an automated study. By saving weeks and months of manual work, you can now solely focus on your engineering expertise and let your computer do all the tedious jobs.

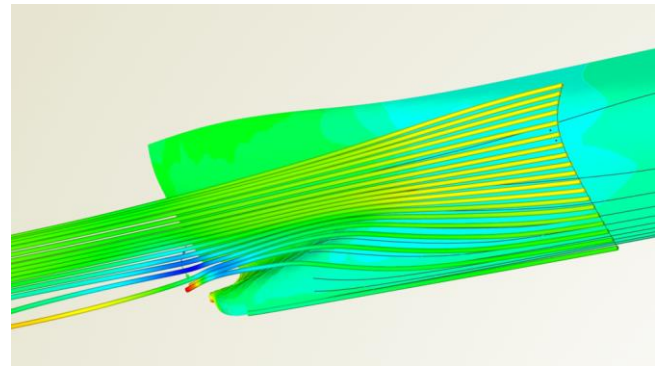


Efficient parametric hull form in CAESES with longitudinal controls for waterline angle distribution, displacement, COB and more geometric quantities

CONNECT YOUR CFD TOOL

CAESES® couples to all major CFD packages to automate the CFD process.

There is an add-on available for the CFD package SHIPFLOW. Other solutions such as FINE/Marine, STAR-CCM+ and even in-house/proprietary tools can also be linked to CAESES®.

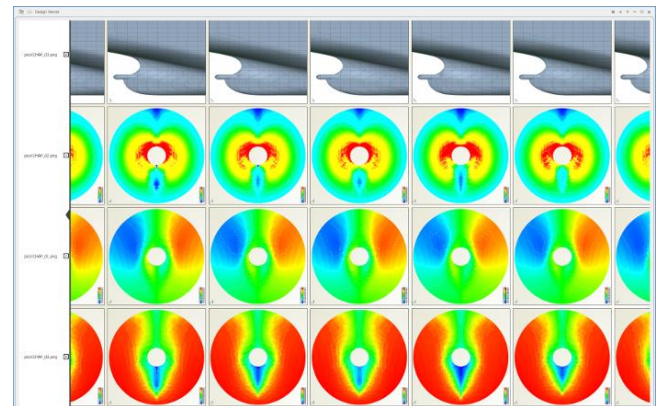


Interactive post-processing capabilities in CAESES

HULL FORM OPTIMIZATION

CAESES® provides comprehensive capabilities for hull form optimization. From integrated optimization strategies up to convenient viewers and 2D charts to compare large design sets – all these powerful tools are easy-to-use.

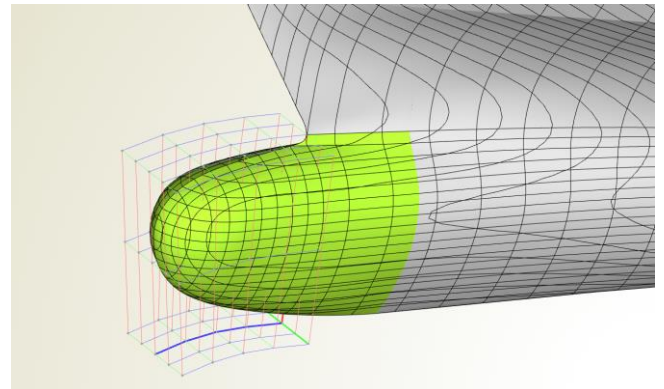
The intuitive and integrated variant management of CAESES® helps you to assess and compare your generated hull forms along with the CFD results.



How to find the best wake quality for a ship design? Generate hull forms and compare wake fields side-by-side in CAESES.

FAST STUDIES OF EXISTING HULLS

No time to set up a parametric model? You can use the efficient Lackenby shift transformation and other deformation methods of CAESES®. These transformations allow you to intuitively reshape your hull, again manually or automated during an optimization. This works with any imported geometry (e.g. IGES, STEP, STL).



Free-form deformation of imported geometries

CAESES®: YOUR ALL-IN-ONE SOLUTION FOR OPTIMAL HULL DESIGN

- Comprehensive CAD dedicated to naval architects, including hydrostatic calculations
- Capabilities to connect and automate external tools, such as meshing, CFD, sea-keeping, structural
- Integrated interactive post-processing of CFD results, e.g. pressure plots, iso surfaces etc.
- Integrated strategies for design studies and optimization including variant management