COOPERATION

On board you can expect among others

Tests and evaluations
- Driving tests
- Finite Element Analysis
- Material testing
- Vibration tests

Enthusiastic students for internships
- Career entry
- Project and final papers

University contacts

Donation receipts

You contribute to

Know-How
- Software
- Workshops
- Exchange of experience

Manufacturing
- Consumables
- Production facilities

Test site

Financial resources

ABOUT US

Our research and development project exists since October 2018. We are students at the Department of Mechanical and Energy Engineering at the University of Applied Sciences in Gießen.

The aim of the first project period was to investigate the driving dynamics of sport boats. Special attention was paid to the transition from trawler speed to glide ride.

Enlightening results were obtained by varying various parameters such as engine height, centre of gravity position or hull angle.

These parameters, together with the magnitude of their respective influence, were transferred into a self-created calculation tool. This tool now allows for an adjustment of the driving characteristics of the boat with existing hull size by selecting suitable components such as the appropriate propeller or engine size.

The research boat during a test run

The knowledge and experience gained now forms the base for a self-designed and manufactured research boat.

CONTACT

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Team Nautic

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UNIVERSITY OF APPLIED SCIENCES

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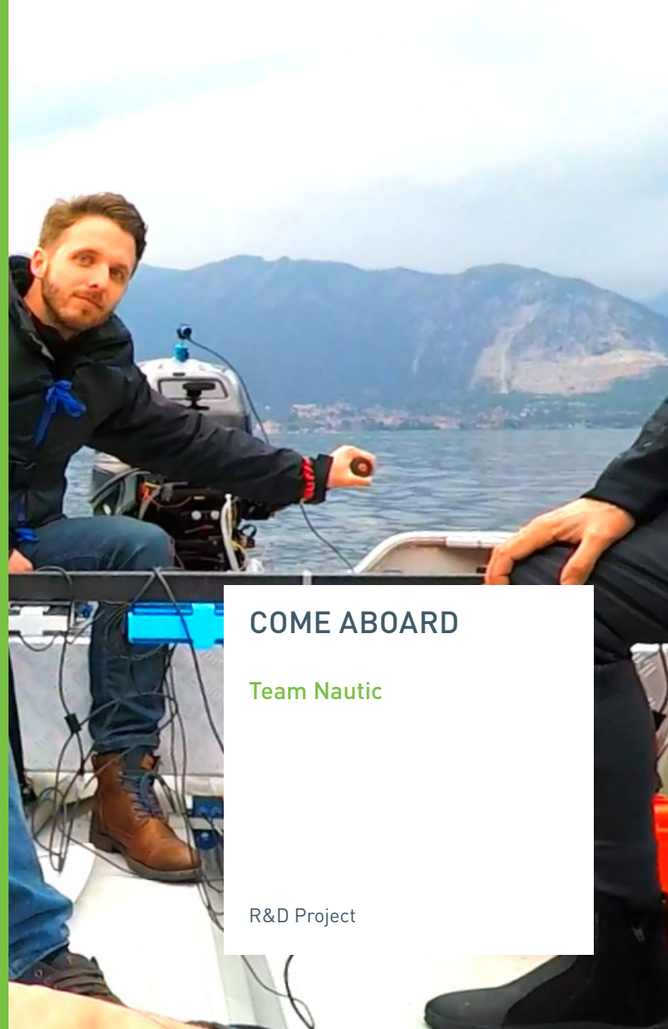
TECHNISCHE HOCHSCHULE MITTELHESSEN



COME ABOARD

Team Nautic

R&D Project

	GOALS	APPLICATION	RESULTS
Drive Tests	Development of a calculation tool Impact assessment of various components Development of reproducible measurement series	Schematic measurement runs with variation of ■ Propellers ■ Motor height ■ Weight distribution	Matlab tool for boat configuration Measurements of axial accelerations Important basics for further developments
Bollard Pull Test	Determination of the propeller thrust Determination of the relationships with ■ Propeller and engine speed ■ Propeller pitch and diameter	Measuring set-up with load cells Fixed shore connection of the boat Use of different propellers Recording of tractive force and speed	Speed-dependent thrust values Suitable measurement setup and conditions Thrust-force-diagrams for individual propellers
Hull Geometry	Determination of the influence of the torso angle Practical experience of torso design ■ Concept and design ■ Manufacturing and testing	Design and construction of an add-on hull ■ Modification of the hull angle ■ Change of static lift Driving tests to compare results	Changed transition to glide ride Documentation on the processing of fibreglass Important basics for further developments

Measurement Technology

VBOX 3iSL
100 HZ
V5

Intertial-
measurement-
system
IMU04

VBOX
Video HD2

measuring
amplifier

Outlook

FEA and CFD
simulations