## References

- [1] I. Castañeda Sabadell, "Design of a physical and interactive real-time simulator based on a dynamic vpp as a support tool for sailing yacht design and operation," Ph.D. dissertation, ETSI Navales, Universidad Politécnica de Madrid, 2018.
- [2] J. Ozanne, Team principal at simulator in motion, simulator and a.i. team lead at alinghi red bull racing, https://www.linkedin.com/in/josephozanne/, Accessed: 2025-09-02, 2025.
- [3] International Moth Class Association, *International moth class rules*, Dec. 2024. [Online]. Available: https://www.sailing.org/classes/moth/#Documents.
- [4] International Hydrofoil Society, Aeromarine origins early work by thomas moy (1861), Online article, Accessed 7 Sep 2025, 2018. [Online]. Available: https://www.foils.org/wp-content/uploads/2018/01/AeromarineOrigins.pdf.
- [5] International Hydrofoil Society, Ships that fly forlanini's hydrofoil on lake maggiore (1906), Online booklet, Accessed 7 Sep 2025, 2018. [Online]. Available: https://www.foils.org/wp-content/uploads/2018/01/ShipsThatFly.pdf.
- [6] Alexander Graham Bell Foundation, *Hydrofoil history: Bell and baldwin's hd-4*, Web page, Accessed 7 Sep 2025, 2024. [Online]. Available: https://agbfoundation.ca/hydrofoil/.
- [7] The Canadian Encyclopedia, *Hydrofoil (historical overview and hd-4 record)*, Web page, Accessed 7 Sep 2025, 2023. [Online]. Available: https://thecanadianencyclopedia.ca/en/article/hydrofoil.
- [8] T. M. Buermann, "An appraisal of hydrofoil supported craft," SNAME Transactions, vol. 61, 1953. [Online]. Available: https://www.foils.org/wp-content/uploads/2018/01/SNAMEtransactionsVol61-1953.pdf.
- [9] E. D'Amato et al., "Hydrodynamic design of fixed hydrofoils for planing craft," Journal of Marine Science and Engineering, vol. 11, no. 2, p. 246, 2023. DOI: 10. 3390/jmse11020246. [Online]. Available: https://www.mdpi.com/2077-1312/11/2/246.
- [10] L. Larsson, R. E. Eliasson, and M. Orych, Principles of Yacht Design, 5th. London: Adlard Coles / Bloomsbury, 2022, ISBN: 9781472981929.
- [11] J. I. R. Blake, Lecture notes on sess3027 yacht & high performance craft, Lecture notes, 2021.

90 References

[12] F. Fossati, Aero-hydrodynamics and the Performance of Sailing Yachts: The Science Behind Sailing Yachts and Their Design. London: A & C Black Publishers Ltd, 2009, p. 352, ISBN: 9781408113387.

- [13] B. Beaver and J. Zseleczky, "Full scale measurements on a hydrofoil international moth," in *SNAME Chesapeake Sailing Yacht Symposium*, 2009, D021S002R006.
- [14] Maguire Boats Ltd. "Main foil parts." Product category page; photograph retrieved by author, Maguire Boats Ltd. (), [Online]. Available: https://maguireboats.com/main-foil-parts-23-c.asp (visited on 09/06/2025).
- [15] F. Eggert, "Flight dynamics and stability of a hydrofoiling international moth with a dynamic velocity prediction program (dvpp)," M.S. thesis, Technische Universität Berlin, 2018.
- [16] J. E. Kerwin, "A velocity prediction program for ocean racing yachts," Rep 78-11 MIT, Jul. 1978.
- [17] A. R. Claughton, J. F. Wellicome, and R. A. Shenoi, *Sailing Yacht Design: Theory*. Harlow: Addison Wesley Longman, 1998.
- [18] A. R. Claughton, "Developments in the ims vpp formulations," in *Proceedings of the 14th Chesapeake Sailing Yacht Symposium*, SNAME, Annapolis, MD, 1999.
- [19] Orc vpp documentation, Technical description of the ORC Velocity Prediction Program, Offshore Racing Congress, 2020. [Online]. Available: https://www.orc.org/rules/.
- [20] P. Kerdraon, B. Horel, P. Bot, A. Letourneur, and D. Le Touzé, "Development of a 6-dof dynamic velocity prediction program for offshore racing yachts," *Ocean Engineering*, vol. 212, p. 107668, 2020. DOI: 10.1016/j.oceaneng.2020.107668.
- [21] D. P. J. Hull, "Speed sailing design & velocity prediction program," BEng thesis, Australian Maritime College, University of Tasmania, 2014.
- [22] N. Patterson and J. Binns, "Development of a six degree of freedom velocity prediction program for the foiling america's cup vessels," *Journal of Sailing Technology*, vol. 7, no. 1, pp. 120–151, 2022.
- [23] A. Persson, "Predicting yacht performance in waves using a cfd velocity prediction program," Ph.D. dissertation, Chalmers University of Technology, 2025.
- [24] R. Tannenberg, S. R. Turnock, K. Hochkirch, and S. W. Boyd, "Vpp driven parametric design of ac75 hydrofoils," *Journal of Sailing Technology*, vol. 8, no. 1, pp. 161–182, 2023.
- [25] L. Sampedro Moix, "Preliminary design of a racing dinghy: F18 catamaran," B.S. thesis, EPEF, Universidade da Coruña, 2023.

References 91

[26] S. Day, L. Letizia, and A. Stuart, "Vpp vs ppp: Challenges in the time-domain prediction of sailing yacht performance," in *Proceedings of the High Performance Yacht Design Conference (HPYD 1)*, Conference dates: 4–6 December 2002, Auckland, New Zealand: Royal Institution of Naval Architects (RINA), 2002. DOI: 10.3940/rina.ya.2002.07.

- [27] D. H. Harris, "Time domain simulation of a yacht sailing upwind in waves," in *Proceedings of the 17th Chesapeake Sailing Yacht Symposium*, Annapolis, MD, USA: SNAME, Chesapeake Section, 2005, pp. 13–32.
- [28] H. Hansen and et al., "Maneuver simulation and optimization for ac50 class," in Journal of Sailing Technology, 2019. [Online]. Available: https://higherlogicdownload.s3.amazonaws.com/SNAME/1516f098-2760-4bff-86fa-9ca63a85f102/UploadedImages/2019-07\_\_Hansen\_et\_al\_\_Maneuver\_Simulation\_and\_Optimisation\_for\_AC50\_Class.pdf.
- [29] M. F. Melis, "Velocity prediction program for a hydrofoiling lake racer," *Journal of Sailing Technology*, 2022. [Online]. Available: https://www.foils.org/wp-content/uploads/2022/08/Melis-Submission-Hamburg-University-Honorable-Mention.pdf.
- [30] K. Hochkirch, Fs-equilibrium user manual, Citado por Tannenberg (2023) como manual de referencia de FS-Equilibrium, DNV GL Maritime, 2018.
- [31] M. Brito, "Use of gomboc to predict the performance of a hydro-foiled moth," Yacht Research Unit, The University of Auckland, Tech. Rep., 2019.
- [32] Simulator in Motion. "Demonstration video (homepage)." Frame captured by the author for academic illustration. (), [Online]. Available: https://www.simulatorinmotion.com/ (visited on 09/07/2025).
- [33] Redondo Studio. "Redondo studio portfolio: Moth." Photo captured by the author for academic illustration. (), [Online]. Available: https://redondo.studio/portfolio/moth2024 (visited on 09/07/2025).
- [34] K. Graf, O. Freiheit, P. Schlockermann, and J. C. Mense, "Vpp-driven sail and foil trim optimization for the olympic nacra 17 foiling catamaran," *Journal of Sailing Technology*, vol. 5, no. 01, pp. 61–81, 2020.
- [35] M. Jardine. "Unboxing the bicker moth with kyle stoneham," Sail-World. (Sep. 6, 2025), [Online]. Available: https://www.sail-world.com/news/289699/Unboxing-the-Bicker-Moth-with-Kyle-Stoneham (visited on 09/09/2025).
- [36] L. Llamas. "Adjust pid controller on arduino." Accessed: 2025-08-25. (2023), [Online]. Available: https://www.luisllamas.es/en/adjust-pid-controller-arduino/.