

Veröffentlichungen – Publications

Univ.-Prof. Dr.-Ing. habil. Mario Oertel

Hydraulic Engineering Section / Civil Engineering

Helmut-Schmidt-University Hamburg

University of the Federal Armed Forces

E-Mail: mario.oertel@hsu-hh.de.de

Web: www.hsu-hh.de/wasserbau

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2025

BELAY, B., OERTEL, M. (2025) *Void Fraction Distribution Downstream of Nonlinear Weirs: An Experimental Investigation Using Trapezoidal A-Type Piano Key Weirs, a Labyrinth Weir, and a Linear Weir*, Journal of Hydraulic Engineering, 151(3), DOI: 10.1061/JHEND8.HYENG- 14118.

JIN, S., SHEN, X., OERTEL, M. (2025) *Discharge Efficiency of an Innovative Composite Piano Key Weir*, Water 2025, 17, 921, [https://doi.org/ 10.3390/w17070921](https://doi.org/10.3390/w17070921).

LÜDDECKE, L., OERTEL, M.(2025) *Piano Key Weir Research: From Past to Future*, 41th IAHR World Congress, Singapur.

OERTEL, M., BRANDT, H., PATZWahl, Y. (2025) *Efficiency of Pile Breakwaters in Experimental Model Tests*, 41th IAHR World Congress, Singapur.

BELAY, B., OERTEL, M.(2025) *Influence of Piano Key Weir Orientation on Sidewall Standing Waves and Downstream Air-Entrainment*, 41th IAHR World Congress, Singapur.

KASISCHKE, K., OERTEL, M.(2025) *Turbulent Profiles of Flows on a Block Ramp via Numerical CFD Simulations*, 41th IAHR World Congress, Singapur.

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EILERMANN, S., LÜDDECKE, L., HOHMANN, M., ZIMMERING, B., OERTEL, M., NIGGEMANN, O. (2024) *A Neural Ordinary Differential Equations Approach for 2D Flow Properties Analysis of Hydraulic Structures*, Proceedings of Machine Learning Research, 255:1–17, 2024 ML-DE Workshop at ECAI 2024.

BESSER, L., OERTEL, M. (2024) *Tailwater Influence on Downstream Flow Conditions of Piano Key Weirs*, 10th IAHR International Symposium on Hydraulic Structures, ISHS2024, Zurich, Switzerland, ISSN 0374-0056, DOI: 10.3929/ethz-b-000675978, 336–345.

BELAY, B., OERTEL, M. (2024) *Air entrainment by plunging jets of piano key weirs: hybrid modeling at a laboratory scale*, 10th IAHR International Symposium on Hydraulic Structures, ISHS2024, Zurich, Switzerland, ISSN 0374-0056, DOI: 10.3929/ethz-b-000675961, 186–195.

KASISCHKE, K., OERTEL, M. (2024) *Hydrodynamic forces on boulders in block ramps during flow transitions via numerical CFD simulation*, 10th IAHR International Symposium on Hydraulic Structures, ISHS2024, Zurich, Switzerland, ISSN 0374-0056, DOI: 10.3929/ethz-b-000676017, 710–719.

BELZNER, F., THORENZ, C., OERTEL, M. (2024) *Monte-Carlo mooring simulations for inland navigation locks*, Proceedings 35th PIANC World Congress, Cape Town, South Africa, 1382-1387

BELAY, B., OERTEL, M. (2024) *Modeling Air-water flows downstream of non-linear weirs*, FLOW-3D World Users Conference, poster presentation, Hamburg, Germany.

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SHEN, X. , OERTEL, M. (2023) *Influence of Piano Key Weir Crest Shapes on Flow Characteristics, Scale Effects, and Energy Dissipation for In-Channel Application*, Journal of Hydraulic Engineering, 149(6), DOI: 10.1061/JHEND8.HYENG-13322.

KASISCHKE, K. , OERTEL, M. (2023) *Discharge Coefficients of a Specific Vertical Slot Fishway Geometry – New Fitting Parameters*, Water 2023, 15(6),1193, <https://doi.org/10.3390/w15061193>.

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OERTEL, M., BELAY, B., SHEN, X. (2023) *Free-surface fluctuations downstream of an A-type trapezoidal piano key weir*, 40th IAHR World Congress, Vienna, Austria.

KASISCHKE, K., OERTEL, M., (2023) *Fluctuation Analysis for Vertical Slot Passes using CFD-simulations and Hilbert-Huang-Transformation*, 40th IAHR World Congress, Vienna, Austria.

BESSER, L., OERTEL, M., (2023) *Influence of Non-Linear-Weir Installation on upstream Floodplains via Numerical Simulations*, 40th IAHR World Congress, Vienna, Austria.

SHEN, X., OERTEL, M. (2023) *Influence of local Submergence on Piano Key Weir Discharge Efficiency*, 40th IAHR World Congress, Vienna, Austria.

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OERTEL, M., SHEN, X. (2022) *3D printing technique for experimental modeling of hydraulic structures: exemplary scaled weir models*, Water 2022, 14(4), 2153, <https://doi.org/10.3390/w14142153>.

BELZNER, F., THORENZ, C., OERTEL, M. (2022) *A modernized safety concept for ship force evaluations during lock filling processes*, Proceedings PIANC Smart Rivers, Nanjing, China.

OERTEL, M., BELAY, B., SHEN, X., WILLEMS, H. (2022) *Introduction and investigation of a large-scale piano key weir fabricated via rapid prototyping*, 8th IAHR International Symposium on Hydraulic Structures, ISHS2022, Roorkee, India.

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TILLMANN-MUMM, J., OERTEL, M. (2022) *Flow Optimization of a Small Lake System in the City of Lübeck via 2D and 3D Numerical Simulation*, Proceedings of the 39th IAHR World Congress, Granada, Spain, doi://10.3850/IAHR-39WC2521716X2022972.

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KASISCHKE, K., OERTEL, M. (2022) *Flow Transitions on Block Ramps*, Proceedings of the 39th IAHR World Congress, Granada, Spain, doi://10.3850/IAHR-39WC2521716X2022725.

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OERTEL, M., KLEIN, J. (2018) *Hydraulische Optimierung einer Fischabstiegsanlage mittels wasserbaulicher Modellversuche*, WasserWirtschaft, 9/2018, 28–35.

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OERTEL, M.; BALMES, J.; BUNG, D. B. (2015) *Numerical Simulation of Erosion Processes in Crossbar Block Ramps*, 36th IAHR World Congress, Delft - The Hague, the Netherlands.

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