List of Publications – Marlis Hochbruck – September 2, 2025

Recent preprints

[1] T. Buchholz and M. Hochbruck. A non-iterative domain decomposition time integrator for linear wave equations. CRC 1173 Preprint 2025/42, Karlsruhe Institute of Technology, jul 2025. URL https://www.waves.kit.edu/downloads/CRC1173_Preprint_2025-42.pdf.

[2] M. Hochbruck and M. Scheifinger. Local time-integration for Friedrich's systems. CRC 1173 Preprint 2025/6, Karlsruhe Institute of Technology, feb 2025. URL https://www.waves.kit.edu/downloads/CRC1173_Preprint_2025-6.pdf.

[3] B. Dörich, J. Dörner, and M. Hochbruck. Error analysis of DGTD for linear Maxwell equations with inhomogeneous interface conditions. CRC 1173 Preprint 2024/16, Karlsruhe Institute of Technology, aug 2024. URL https://www.waves.kit.edu/downloads/CRC1173_Preprint_2024-16.pdf.

[4] M. Hochbruck, J. Köhler, and P. M. Kumbhar. Preconditioned implicit time integration schemes for Maxwell's equations on locally refined grids. CRC 1173 Preprint 2022/29, Karlsruhe Institute of Technology, jun 2022. URL https://www.waves.kit.edu/downloads/CRC1173_Preprint_2022-29.pdf.

Peer reviewed papers

[1] M. Scheifinger, K. Busch, M. Hochbruck, and C. Lasser. Time-integration of Gaussian variational approximation for the magnetic Schrödinger equation. CRC 1173 Preprint 2025/15, Karlsruhe Institute of Technology, apr 2025. URL https://www.waves.kit.edu/downloads/CRC1173_Preprint_2025-15.pdf. To appear in J. Comp. Phys.

[2] D. Eckhardt, M. Hochbruck, and B. Verfürth. Error analysis of an implicit-explicit time discretization scheme for semilinear wave equations with application to multiscale problems. CRC 1173 Preprint 2024/13, Karlsruhe Institute of Technology, jun 2024. URL https://www.waves.kit.edu/downloads/CRC1173_Preprint_2024-13.pdf. To appear in IMA J. Numer. Anal.

[3] S. Burkhard, B. Dörich, M. Hochbruck, and C. Lasser. Variational Gaussian approximation for the magnetic Schrödinger equation. *J. Phys. A*, 57(29):Paper No. 295202, 36, 2024. URL https://doi.org/10.1088/1751-8121/ad591e.

[4] C. Carle and M. Hochbruck. Error analysis of second-order local time integration methods for discontinuous Galerkin discretizations of linear wave equations. *Math. Comp.*, 93(350):2611–2641, 2024. URL https://doi.org/10.1090/mcom/3952.

[5] M. Hochbruck, M. Neher, and S. Schrammer. Dynamical low-rank integrators for second-order matrix differential equations. *BIT*, 63(1):[Paper No. 4], 21, 2023. URL https://doi.org/10.1007/s10543-023-00941-7.

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Theses

[1] M. Hochbruck. *The Padé Table and its Relation to Certain Numerical Algorithms*. Habilitation thesis, Universität Tübingen, 1996.

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Miscellaneous

[1] M. Hochbruck. Überarbeitung der DFG-Denkschrift "Sicherung guter wissenschaftlicher Praxis". *WissR*, 57(1):13–21, aug 2024. URL https://doi.org/10.1628/wissr-2024-0004.

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