

Complete bibliography of Ben Schweizer

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References

- [1] G. Allaire, A. Lamacz-Keymling, and B. Schweizer. “Homogenization of systems of wave equations and ring solutions with dispersive profiles”. Submitted preprint, TU Dortmund, 2026-02. 2026.
- [2] B. Schweizer. “Edge-modes at interfaces between periodic media via reduced spatial dynamics near Dirac points”. Submitted preprint, TU Dortmund, 2026-01. 2026.
- [3] B. Schweizer and D. Wiedemann. “Maxwell’s equations with mixed impedance boundary conditions”. Submitted preprint, TU Dortmund, 2025-05. 2025.
- [4] B. Delourme, B. Schweizer, and D. Wiedemann. “On polarization interface conditions for time-harmonic Maxwell’s equations”. Submitted preprint, TU Dortmund, 2025-04. 2025.
- [5] A. Lamacz-Keymling, T. Schubert, and B. Schweizer. “Existence result for Maxwell’s equations in half-waveguides”. *Analysis and Applications* 0.0 (2026), pp. 1–33.
- [6] B. Schweizer. “Effective sound absorbing boundary conditions for complex geometries”. *To appear in SIAM MMS* (2026). Submitted preprint, TU Dortmund, 2024-02.
- [7] M. Harnisch et al. “On Challenges Using Long Short-Term Memory Networks in Data-Driven Inelasticity”. *Proceedings in Applied Mathematics and Mechanics* 26.2 (2026), e70115.
- [8] B. Schweizer and D. Wiedemann. “Interface Conditions for Maxwell’s Equations by Homogenization of Thin Inclusions: Transmission, Reflection, or Polarization”. *SIAM Journal on Mathematical Analysis* 58.3 (2026), pp. 2186–2213.
- [9] A. Kirsch and B. Schweizer. “Spectral gap properties of perturbed periodic media”. *IMA J. Appl. Math.* 90.6 (2025), pp. 595–627.
- [10] A. Kirsch and B. Schweizer. “Periodic waveguides revisited: Radiation conditions, limiting absorption principles, and the space of bounded solutions”. *Mathematical Methods in the Applied Sciences* 48.2 (2025), pp. 2267–2293.
- [11] A. Kirsch and B. Schweizer. “Time-harmonic Maxwell’s equations in periodic waveguides”. *Arch. Ration. Mech. Anal.* 249.3 (2025), Paper No. 25, 41.
- [12] K. Mitra, A. Rätz, and B. Schweizer. “Travelling wave solutions for gravity fingering in porous media flows”. *J. Differential Equations* 394 (2024), pp. 120–151.
- [13] M. Schäffner and B. Schweizer. “The time horizon for stochastic homogenization of the one-dimensional wave equation”. *Asymptotic Analysis* 144.1 (2024), pp. 1143–1173.
- [14] B. Schweizer, M. Schäffner, and Y. Tjandrawidjaja. “A radiation box domain truncation scheme for the wave equation”. *IMA J. Numer. Anal.* 44.2 (2024), pp. 920–944.
- [15] M. Harnisch et al. “Data-driven simulation of functional fatigue in shape memory alloy wires”. *Proceedings in Applied Mathematics and Mechanics* 24.2 (2024), e202400079.
- [16] T. Bartel et al. “A data-driven approach for plasticity using history surrogates: theory and application in the context of truss structures”. *Comput. Methods Appl. Mech. Engrg* 414.116138 (2023), p. 22.
- [17] K. Poelstra, T. Bartel, and B. Schweizer. “A data driven framework for evolutionary problems in solid mechanics”. *ZAMM* 103.3 (2023), p. 20.

- [18] B. Schweizer. “Inhomogeneous Helmholtz equations in wave guides – existence and uniqueness results with energy methods”. *European J. Appl. Math.* 34.2 (2023), pp. 211–237.
- [19] C. Christof et al. “Strong stationarity for optimal control of variational inequalities of the second kind”. *Non-smooth and complementarity-based distributed parameter systems-simulation and hierarchical optimization*. Vol. 172. Birkhäuser/Springer, Cham, 2022, pp. 307–327.
- [20] P. Donato, A. Lamacz, and B. Schweizer. “Sound absorption by perforated walls along boundaries”. *Applicable Analysis. An International Journal* 101.13 (2022), pp. 4397–4411.
- [21] M. Schäffner, B. Schweizer, and Y. Tjandrawidjaja. “Domain truncation methods for the wave equation in a homogenization limit”. *Applicable Analysis* 101.12 (2022), pp. 4149–4170.
- [22] K. H. Poelstra, B. Schweizer, and M. Urban. “The geometric average of curl-free fields in periodic geometries”. *Analysis (Berlin)* 41.3 (2021), pp. 179–197.
- [23] A. Lamacz and B. Schweizer. “Representation of solutions to wave equations with profile functions”. *Analysis and Applications* 18.6 (2020), pp. 1001–1024.
- [24] M. Ohlberger et al. “Mathematical analysis of transmission properties of electromagnetic meta-materials”. *Networks and Heterogeneous Media* 15.1 (2020), pp. 29–56.
- [25] M. Röger and B. Schweizer. “Relaxation analysis in a data driven problem with a single outlier”. *Calc. Var. Partial Differential Equations* 59.4 (2020), Paper No. 119, 22.
- [26] B. Schweizer. “Effective Helmholtz problem in a domain with a Neumann sieve perforation”. *Journal de Mathématiques Pures et Appliquées. Neuvième Série* 142 (2020), pp. 1–22.
- [27] B. Schweizer and M. Urban. “On a limiting absorption principle for sesquilinear forms with an application to the Helmholtz equation in a waveguide”. *Mathematics of Wave Phenomena*. Ed. by W. Dörfler et al. 2020.
- [28] E. El Behi-Gornostaeva, K. Mitra, and B. Schweizer. “Traveling wave solutions for the Richards equation with hysteresis”. *IMA Journal of Applied Mathematics* 84.4 (2019), pp. 797–812.
- [29] T. Dohnal and B. Schweizer. “A Bloch wave numerical scheme for scattering problems in periodic wave-guides”. *SIAM J Numer Anal* 56.3 (2018), pp. 1848–1870.
- [30] M. Heida and B. Schweizer. “Stochastic homogenization of plasticity equations”. *ESAIM Control Optim. Calc. Var.* 24.1 (2018), pp. 153–176.
- [31] A. Lamacz and B. Schweizer. “Outgoing wave conditions in photonic crystals and transmission properties at interfaces”. *ESAIM Math. Model. Numer. Anal.* 52.5 (2018), pp. 1913–1945.
- [32] R. Lipton and B. Schweizer. “Effective Maxwell’s equations for perfectly conducting split ring resonators”. *Arch Ration Mech Anal* 229.3 (2018), pp. 1197–1221.
- [33] B. Schweizer. “On Friedrichs inequality, Helmholtz decomposition, vector potentials, and the div-curl lemma”. *Trends in applications of mathematics to mechanics*. Vol. 27. Springer, Cham, 2018, pp. 65–79.
- [34] B. Schweizer and F. Theil. “Lattice dynamics on large time scales and dispersive effective equations”. *SIAM J Appl Math* 78.6 (2018), pp. 3060–3086.
- [35] B. Schweizer and M. Urban. “Effective Maxwell’s equations in general periodic microstructures”. *Applicable Analysis. An International Journal* 97.13 (2018), pp. 2210–2230.
- [36] C. Dörlemann, M. Heida, and B. Schweizer. “Transmission conditions for the Helmholtz equation in perforated domains”. *Vietnam J. Math.* 45.1-2 (2017), pp. 241–253.
- [37] A. Lamacz and B. Schweizer. “Effective acoustic properties of a meta-material consisting of small Helmholtz resonators”. *Discrete Contin. Dyn. Syst. Ser. S* 10.4 (2017), pp. 815–835.
- [38] M. Röger and B. Schweizer. “Strain gradient visco-plasticity with dislocation densities contributing to the energy”. *Math Models Methods Appl Sci* 27.14 (2017), pp. 2595–2629.

- [39] B. Schweizer. “Hysteresis in porous media: modelling and analysis”. *Interfaces Free Bound.* 19.3 (2017), pp. 417–447.
- [40] B. Schweizer. “Resonance meets homogenization: construction of meta-materials with astonishing properties”. *Jahresber. Dtsch. Math.-Ver.* 119.1 (2017), pp. 31–51.
- [41] M. Heida and B. Schweizer. “Non-periodic homogenization of infinitesimal strain plasticity equations”. *ZAMM Z. Angew. Math. Mech.* 96.1 (2016), pp. 5–23.
- [42] A. Lamacz and B. Schweizer. “A negative index meta-material for Maxwell’s equations”. *SIAM J Math Anal* 48.6 (2016), pp. 4155–4174.
- [43] T. Dohnal, A. Lamacz, and B. Schweizer. “Dispersive homogenized models and coefficient formulas for waves in general periodic media”. *Asymptot. Anal.* 93.1-2 (2015), pp. 21–49.
- [44] P. Henning, M. Ohlberger, and B. Schweizer. “Adaptive heterogeneous multiscale methods for immiscible two-phase flow in porous media”. *Comput Geosci* 19.1 (2015), pp. 99–114.
- [45] B. Schweizer. *Darcy’s law and groundwater flow modelling*. Snapshot from Oberwolfach. 2015.
- [46] B. Schweizer. “The low-frequency spectrum of small Helmholtz resonators”. *Proceedings A* 471.2174 (2015), pp. 20140339, 18.
- [47] B. Schweizer and M. Veneroni. “Homogenization of plasticity equations with two-scale convergence methods”. *Appl. Anal.* 94.2 (2015), pp. 376–399.
- [48] T. Dohnal, A. Lamacz, and B. Schweizer. “Bloch-wave homogenization on large time scales and dispersive effective wave equations”. *Multiscale Model Simul* 12.2 (2014), pp. 488–513.
- [49] P. Henning, M. Ohlberger, and B. Schweizer. “An adaptive multiscale finite element method”. *Multiscale Model Simul* 12.3 (2014), pp. 1078–1107.
- [50] R. V. Kohn et al. “A variational perspective on cloaking by anomalous localized resonance”. *Communications in Mathematical Physics* 328.1 (2014), pp. 1–27.
- [51] A. Rätz and B. Schweizer. “Hysteresis models and gravity fingering in porous media”. *ZAMM Z. Angew. Math. Mech.* 94.7-8 (2014), pp. 645–654.
- [52] B. Schweizer and M. Veneroni. “On non-periodic homogenization of time-dependent equations”. *Nonlinear Anal Real World Appl* 15 (2014), pp. 381–391.
- [53] G. Bouchitté and B. Schweizer. “Plasmonic waves allow perfect transmission through sub-wavelength metallic gratings”. *Netw. Heterog. Media* 8.4 (2013), pp. 857–878.
- [54] P. Henning, M. Ohlberger, and B. Schweizer. “Homogenization of the degenerate two-phase flow equations”. *Math Models Methods Appl Sci* 23.12 (2013), pp. 2323–2352.
- [55] J. Koch, A. Rätz, and B. Schweizer. “Two-phase flow equations with a dynamic capillary pressure”. *European J. Appl. Math.* 24.1 (2013), pp. 49–75.
- [56] A. Lamacz and B. Schweizer. “Effective Maxwell equations in a geometry with flat rings of arbitrary shape”. *SIAM J Math Anal* 45.3 (2013), pp. 1460–1494.
- [57] B. Schweizer. *Partielle Differentialgleichungen*. Eine anwendungsorientierte Einführung. [An application-oriented introduction]. Springer-Verlag, Berlin, 2013, p. 599. ISBN: 978-3-642-40637-9.
- [58] B. Schweizer. “Instability of gravity wetting fronts for Richards equations with hysteresis”. *Interfaces Free Bound.* 14.1 (2012), pp. 37–64.
- [59] B. Schweizer. “The Richards equation with hysteresis and degenerate capillary pressure”. *J. Differential Equations* 252.10 (2012), pp. 5594–5612.
- [60] C. J. Van Duijn et al. “Editorial [Special issue: Multi-scale problems in sustainable resource management]”. *IMA J Appl Math* 77.6 (2012), pp. 727–728.
- [61] S. Conti and B. Schweizer. “On scalar metrics that maximize geodesic distances in the plane”. *Calc. Var. Partial Differential Equations* 41.1-2 (2011), pp. 151–177.
- [62] A. Lamacz, A. Rätz, and B. Schweizer. “A well-posed hysteresis model for flows in porous media and applications to fingering effects”. *Adv. Math. Sci. Appl.* 21.1 (2011), pp. 33–64.

- [63] I. S. Pop and B. Schweizer. “Regularization schemes for degenerate Richards equations and outflow conditions”. *Math Models Methods Appl Sci* 21.8 (2011), pp. 1685–1712.
- [64] B. Schweizer and M. Veneroni. “The needle problem approach to non-periodic homogenization”. *Netw. Heterog. Media* 6.4 (2011), pp. 755–781.
- [65] G. Bouchitté and B. Schweizer. “Cloaking of small objects by anomalous localized resonance”. *Quart. J. Mech. Appl. Math.* 63.4 (2010), pp. 437–463.
- [66] G. Bouchitté and B. Schweizer. “Homogenization of Maxwell’s equations in a split ring geometry”. *Multiscale Model Simul* 8.3 (2010), pp. 717–750.
- [67] M. Lenzinger and B. Schweizer. “Effective reaction rates of a thin catalyst layer”. *Math Methods Appl Sci* 33.8 (2010), pp. 974–984.
- [68] M. Lenzinger and B. Schweizer. “Two-phase flow equations with outflow boundary conditions in the hydrophobic-hydrophilic case”. *Nonlinear Anal.* 73.4 (2010), pp. 840–853.
- [69] B. Schweizer and M. Veneroni. “Periodic homogenization of Prandtl-Reuss plasticity equations in arbitrary dimension”. *Journal of Multiscale Modelling* 2(1-2) (2010), pp. 69–106.
- [70] F. Buzzi, M. Lenzinger, and B. Schweizer. “Interface conditions for degenerate two-phase flow equations in one space dimension”. *Analysis (Munich)* 29.3 (2009), pp. 299–316.
- [71] C. Melcher and B. Schweizer. “Direct approach to L^p estimates in homogenization theory”. *Ann. Mat. Pura Appl. (4)* 188.3 (2009), pp. 399–416.
- [72] B. Schweizer. “Homogenization of the Prager model in one-dimensional plasticity”. *Contin. Mech. Thermodyn.* 20.8 (2009), pp. 459–477.
- [73] D. Horstmann and B. Schweizer. “A free boundary characterization of measure-valued solutions for forward-backward diffusion”. *Adv. Differential Equations* 13.3-4 (2008), pp. 201–227.
- [74] M. Mihailovici and B. Schweizer. “Effective model for the cathode catalyst layer in fuel cells”. *Asymptot. Anal.* 57.1-2 (2008), pp. 105–123.
- [75] B. Schweizer. “Homogenization of degenerate two-phase flow equations with oil trapping”. *SIAM J. Math. Anal.* 39.6 (2008), pp. 1740–1763.
- [76] F. Strauß, V. Heuveline, and B. Schweizer. “Existence and approximation results for shape optimization problems in rotordynamics”. *Numerische Mathematik* 109.2 (2008), pp. 311–332.
- [77] W. Jäger and B. Schweizer. “Microscopic interfaces in porous media”. *Reactive flows, diffusion and transport*. Springer, Berlin, 2007, pp. 555–565.
- [78] M. Ohlberger and B. Schweizer. “Modelling of interfaces in unsaturated porous media”. *Discrete Contin. Dyn. Syst. Dynamical systems and differential equations*. Proceedings of the 6th AIMS International Conference, suppl. (2007), pp. 794–803.
- [79] B. Schweizer. “Averaging of flows with capillary hysteresis in stochastic porous media”. *European J. Appl. Math.* 18.3 (2007), pp. 389–415.
- [80] B. Schweizer. “Regularization of outflow problems in unsaturated porous media with dry regions”. *J. Differential Equations* 237.2 (2007), pp. 278–306.
- [81] B. Schweizer et al. “Fluid flows and free boundaries”. *Reactive flows, diffusion and transport*. Springer, Berlin, 2007, pp. 5–24.
- [82] S. Conti and B. Schweizer. “A sharp-interface limit for a two-well problem in geometrically linear elasticity”. *Arch Ration Mech Anal* 179.3 (2006), pp. 413–452.
- [83] S. Conti and B. Schweizer. “Gamma convergence for phase transitions in impenetrable elastic materials”. *Multi scale problems and asymptotic analysis*. Vol. 24. Gakkotosho, Tokyo, 2006, pp. 105–118.
- [84] S. Conti and B. Schweizer. “Rigidity and gamma convergence for solid-solid phase transitions with $SO(2)$ invariance”. *Comm. Pure Appl. Math.* 59.6 (2006), pp. 830–868.

- [85] G. Buttazzo and B. Schweizer. “ Γ convergence of Hausdorff measures”. *J. Convex Anal.* 12.1 (2005), pp. 239–253.
- [86] S. Heinze and B. Schweizer. “Creeping fronts in degenerate reaction-diffusion systems”. *Nonlinearity* 18.6 (2005), pp. 2455–2476.
- [87] B. Schweizer. “A priori estimates for the Euler equation with a free boundary”. *EQUADIFF 2003*. World Sci. Publ., Hackensack, NJ, 2005, pp. 401–406.
- [88] B. Schweizer. “A stochastic model for fronts in porous media”. *Ann. Mat. Pura Appl. (4)* 184.3 (2005), pp. 375–393.
- [89] B. Schweizer. “Laws for the capillary pressure in a deterministic model for fronts in porous media”. *SIAM J. Math. Anal.* 36.5 (2005), pp. 1489–1521.
- [90] B. Schweizer. “On the three-dimensional Euler equations with a free boundary subject to surface tension”. *Ann. Inst. H. Poincaré C Anal. Non Linéaire* 22.6 (2005), pp. 753–781.
- [91] B. Schweizer. “Viscous water waves in a bifurcation approach and connections to inviscid theories”. *EQUADIFF 2003*. World Sci. Publ., Hackensack, NJ, 2005, pp. 219–224.
- [92] U. M. Liegibel et al. “Fluid Shear of Low Magnitude Increases Growth and Expression of TGF β 1 and Adhesion Molecules in Human Bone Cells in Vitro”. *Experimental and Clinical Endocrinology & Diabetes* 112.07 (2004), pp. 356–363.
- [93] B. Schweizer. “A stable time discretization of the Stefan problem with surface tension”. *SIAM Journal on Numerical Analysis* 40.3 (2002), pp. 1184–1205.
- [94] B. Schweizer. “Homogenization of a free boundary problem: the no-slip condition”. *Multi-scale problems in science and technology (Dubrovnik, 2000)*. Springer, Berlin, 2002, pp. 283–290.
- [95] B. Schweizer. “A well-posed model for dynamic contact angles”. *Nonlinear Anal.* 43.1 (2001), pp. 109–125.
- [96] B. Schweizer. “Bifurcation analysis for surface waves generated by wind”. *SIAM J. Appl. Math.* 62.2 (2001), pp. 407–423.
- [97] B. Schweizer. “A two-phase flow with a viscous and an inviscid fluid”. *Comm. Partial Differential Equations* 25.5-6 (2000), pp. 887–901.
- [98] B. Schweizer. “Homogenization of a free boundary”. *Communications on Pure and Applied Mathematics* 53.9 (2000), pp. 1118–1152.
- [99] B. Schweizer. “Modelling the dynamic contact angle”. *Partial differential equations (Praha, 1998)*. Vol. 406. Chapman & Hall/CRC, Boca Raton, FL, 2000, pp. 309–311.
- [100] B. Schweizer. “Uniform estimates in two periodic homogenization problems”. *Communications on Pure and Applied Mathematics* 53.9 (2000), pp. 1153–1176.
- [101] B. Schweizer. “Free boundary fluid systems in a semigroup approach and oscillatory behavior”. *SIAM J. Math. Anal.* 28.5 (1997), pp. 1135–1157.
- [102] B. Schweizer. “Global solutions of quasilinear wave equations and stability of minimal surfaces”. *Analysis* 14.4 (1994), pp. 393–414.