

Jan Macháček

curriculum vitae

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Work experience

- since 11/2020 **Head of work group "Numerical Geotechnics",**
Permanent position, Institute of Geotechnics, Technical University of Darmstadt (TUDa), Franziska-Braun-Str. 7, 64287 Darmstadt.
- 2020-2024 **Post-Doc Researcher,**
Chair of Soil Mechanics, Foundation Engineering and Environmental Geotechnics, Ruhr University Bochum (RUB), Universitätsstr. 150, 44801 Bochum.
- since 2019 **Freelancer,**
Ingenieurbüro für Geotechnik Prof. Dr.-Ing. Triantafyllidis, Karlstr. 80, 76137 Karlsruhe.
- 2016-2020 **Research Assistant,**
Institute of Soil Mechanics and Rock Mechanics (IBF), Karlsruhe Institute of Technology (KIT), Engler-Bunte-Ring 14, 76131 Karlsruhe.

Education

- 2019 **Doctorate:**
Contributions to the Numerical Modelling of Saturated and Unsaturated Soils,
Institute of Soil Mechanics and Rock Mechanics (IBF), Defence: 19.08.2019,
With distinction (summa cum laude), Awarded with the Carl-Rappert-Grundbau Prize.
- 2014–2016 **Master studies: Funktionaler und Konstruktiver Ingenieurbau (Geotechnik),**
Karlsruhe Institute of Technology (KIT), with distinction.
Master thesis, *Entwicklung und Implementierung eines dreieckförmigen Dreiphasen-Bodenelementes für ebene Verformungen sowie Simulierung von Randwertproblemen mit Teilsättigung,* Awarded with the DYNAmore Prize.
- 2010–2014 **Bachelor studies: Civil Engineering,**
Karlsruhe Institute of Technology (KIT).
Bachelorthesis, *FE-Prognose der Langzeitsetzungen der Schleuse Uelzen I zur Validierung eines Akkumulationsmodells,* Awarded with the Bilfinger SE Prize.

Awards, Honors and Recognitions

- 2023 **Invited Session,** *XVII International Conference on Computational Plasticity (COMPLAS 2023), Advances In Modeling Soils Under Cyclic and High-Cyclic Loading.*
- 2023 **Session Chair,** *10th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE) 2023, Geo-energy and energy geotechnics.*
- 2022 **Award for the presentation at the "Forum für junge Geotechnik-Ingenieure und -Ingenieurinnen 2022".**
Award of the German Geotechnical Society, Title of the presentation "Langzeitverhalten von hochzyklisch beanspruchten Pfahlgründungen unter Berücksichtigung des Installationsprozesse"

2021 **Carl-Rappert-Grundbaupreis 2021.**

Award for the dissertation, award of the company Keller Grundbau and the German Geotechnical Society for special scientific knowledge in the field of geotechnics

2017 **Ludwig-Lenz-Züblin-Prize, (KIT).**

Prize of the company Ed. Züblin AG for particularly good academic performance in the study of civil engineering and surveying

2016 **DYNAmore Prize, (KIT).**

Prize of the company DYNAmore GmbH for outstanding master theses

2014 **Bilfinger SE Prize, (KIT).**

Prize of the company Bilfinger SE for the promotion of young engineers for outstanding performance in the bachelor's final examination (bachelor thesis)

Software

numgeo, *2D and 3D finite element program designed for geotechnical boundary value problems*, www.numgeo.de.

numgeo-ACT, *Tool(set) for the automatic calibration of advanced soil models for monotonic as well as cyclic loading*, <https://j-machacek.github.io/numgeo-ACT/>.

Reviewer for

Acta Geotechnica (Springer).

Finite Elements in Analysis & Design (Elsevier).

Computers & Geotechnics (Elsevier).

Journal of Zhejiang University-SCIENCE A (Springer).

Geotechnical and Geological Engineering (Springer).

Mathematics (MDPI).

Publications

My scientific work to date is reflected in 30 publications in peer-reviewed journals, 8 conference contributions with and 16 without peer review. A detailed list of publications can be found below.

Dissertation

- 2020 Machaček, J. (2020). "Contributions to the numerical modelling of saturated and unsaturated soils". ISSN: 0453-3267 Series: Veröffentlichungen des Institutes für Bodenmechanik und Felsmechanik am Karlsruher Institut für Technologie (KIT) Volume: 187. PhD thesis. Karlsruher Institut für Technologie (KIT). 257 pp.

Peer-reviewed journals (30)

- 2024 Machaček, J., Nitsch, A., Wichtmann, T., and Grandas Tavera, C. E. (Mar. 2024). "Numerical Modelling of Expansive Geomaterials: Finite Element Formulation and Constitutive Models". In: *Computers and Geotechnics (submitted)*.

Shakya, S., Schmüdderich, C., Machaček, J., Prada-Sarmiento, L. F., and Wichtmann, T. (2024). "Influence of Sampling Methods on the Accuracy of Machine Learning Predictions Used for Strain-Dependent Slope Stability". In: *Geosciences* 14.44. ISSN: 2076-3263. DOI: 10.3390/geosciences14020044.

Staubach, P., Wegener, D., Machaček, J., and Wichtmann, T. (June 2024). "Long-Term Settlement of Dynamically Loaded Shallow Foundations". In: *International Journal of Ge-*

omechanics 24.6, p. 04024099. ISSN: 1532-3641, 1943-5622. DOI: 10.1061/IJGNAI.GMENG-8977.

Tafili, M., Staubach, P., Machaček, J., Zachert, H., and Wichtmann, T. (June 22, 2024). "Predictive Abilities of Constitutive Models for Clay under Monotonic and Cyclic Loading: Element Tests and Centrifuge Experiments". In: *Géotechnique*, pp. 1–17. ISSN: 0016-8505, 1751-7656. DOI: 10.1680/jgeot.23.00268.

- 2023 Machaček, J., Fuentes, W., Staubach, P., Zachert, H., Wichtmann, T., and Triantafyllidis, T. (2023). "A Theory of Porous Media for Unsaturated Soils with Immobile Air". In: *Computers and Geotechnics* 157, p. 105324. ISSN: 0266-352X. DOI: 10.1016/j.compgeo.2023.105324.

Machaček, J. and Staubach, P. (2023a). "Entwicklungen in der numerischen Modellierung geotechnischer Randwertprobleme". In: *Bautechnik* 100.9, pp. 1–12. DOI: 10.1002/bate.202300060. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/bate.202300060>.

Nitsch, A., Leuthold, J., Machaček, J., and Grandas Tavera, C. E. (Jan. 11, 2023). "Experimental Investigations on Hydro-mechanical Processes in Reconstituted Clay Shale and Their Significance for Constitutive Modelling". In: *Rock Mechanics and Rock Engineering*. ISSN: 0723-2632, 1434-453X. DOI: 10.1007/s00603-022-03202-1.

Nitsch, A., Machaček, J., Wichtmann, T., and Grandas Tavera, C. E. (2023b). "Validierung und Kalibrierung eines hypoplastischen Stoffmodells für expansive Böden". In: *Bautechnik*. DOI: 10.1002/bate.202300062. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/bate.202300062>.

Staubach, P., Kimmig, I., Machaček, J., Wichtmann, T., and Triantafyllidis, T. (Mar. 2023a). "Deep Vibratory Compaction Simulated Using a High-Cycle Accumulation Model". In: *Soil Dynamics and Earthquake Engineering* 166, p. 107763. ISSN: 02677261. DOI: 10.1016/j.soildyn.2023.107763.

Staubach, P., Kimmig, I., Machaček, J., Wichtmann, T., and Triantafyllidis, T. (Apr. 11, 2023b). "Reply to the discussion by V. Osinov et al. on "Deep vibratory compaction simulated using a high-cycle accumulation model" [Soil Dyn Earthq Eng 2023; 166: 107763]". In: *Soil Dynamics and Earthquake Engineering*, p. 107944. ISSN: 0267-7261. DOI: 10.1016/j.soildyn.2023.107944.

Staubach, P. and Machaček, J. (Nov. 2023). "Separating Fluid and Solid Contact Constraints for Hydro-Mechanically Coupled Finite Elements Discretising Fluid Displacement". In: *Computer Methods in Applied Mechanics and Engineering* 416, p. 116451. ISSN: 00457825. DOI: 10.1016/j.cma.2023.116451.

Staubach, P., Tschirschky, L., Machaček, J., and Wichtmann, T. (2023). "Monopile installation in clay and subsequent response to millions of lateral load cycles". In: *Computers and Geotechnics* 155, p. 105221. ISSN: 0266-352X. DOI: <https://doi.org/10.1016/j.compgeo.2022.105221>.

Tafili, M. and Machaček, J. (Oct. 27, 2023). "Generalized Hydro-Mechanically Coupled Hypoplastic Constitutive Model for Unsaturated Collapsible Soils". In: *Canadian Geotechnical Journal*, cgj-2022-0633. ISSN: 0008-3674, 1208-6010. DOI: 10.1139/cgj-2022-0633.

- 2022 Grandas Tavera, C. E., Nitsch, A., and Machaček, J. (Apr. 12, 2022). "A 1D Hypoplastic constitutive model for expansive soils". In: *Acta Geotechnica*. ISSN: 1861-1125, 1861-1133. DOI: 10.1007/s11440-022-01548-y.
- Machaček, J., Staubach, P., Tavera, C. E. G., Wichtmann, T., and Zachert, H. (Aug. 29, 2022). "On the automatic parameter calibration of a hypoplastic soil model". In: *Acta Geotechnica*. ISSN: 1861-1125, 1861-1133. DOI: 10.1007/s11440-022-01669-4.
- Schmüdderich, C., Machaček, J., Prada-Sarmiento, L. F., Staubach, P., and Wichtmann, T. (2022). "Strain-dependent slope stability for earthquake loading". In: *Computers and Geotechnics*, p. 105048. ISSN: 0266-352X. DOI: <https://doi.org/10.1016/j.compgeo.2022.105048>.
- Staubach, P., Machaček, J., Bienen, B., and Wichtmann, T. (Nov. 2022). "Long-Term Response of Piles to Cyclic Lateral Loading Following Vibratory and Impact Driving in Water-Saturated Sand". In: *Journal of Geotechnical and Geoenvironmental Engineering* 148.11, p. 04022097. ISSN: 1090-0241, 1943-5606. DOI: 10.1061/(ASCE)GT.1943-5606.0002906.
- Staubach, P., Machaček, J., Tafili, M., and Wichtmann, T. (Jan. 18, 2022). "A high-cycle accumulation model for clay and its application to monopile foundations". In: *Acta Geotechnica*. ISSN: 1861-1125, 1861-1133. DOI: 10.1007/s11440-021-01446-9.
- Staubach, P., Machaček, J., and Wichtmann, T. (June 2022b). "Mortar contact discretisation methods incorporating interface models based on Hypoplasticity and Sanisand: Application to vibratory pile driving". In: *Computers and Geotechnics* 146, p. 104677. ISSN: 0266352X. DOI: 10.1016/j.compgeo.2022.104677.
- Staubach, P., Machaček, J., and Wichtmann, T. (Feb. 21, 2022c). "Novel approach to apply existing constitutive soil models to the modelling of interfaces". In: *International Journal for Numerical and Analytical Methods in Geomechanics* 46.7, pp. 1241–1271. ISSN: 1096-9853. DOI: 10.1002/nag.3344.
- 2021 Machaček, J., Staubach, P., Tafili, M., Zachert, H., and Wichtmann, T. (Oct. 2021a). "Investigation of three sophisticated constitutive soil models: From numerical formulations to element tests and the analysis of vibratory pile driving tests". In: *Computers and Geotechnics* 138, p. 104276. ISSN: 0266352X. DOI: 10.1016/j.compgeo.2021.104276.
- Staubach, P., Machaček, J., Sharif, R., and Wichtmann, T. (June 2021). "Back-analysis of model tests on piles in sand subjected to long-term lateral cyclic loading : Impact of the pile installation and application of the HCA model". In: *Computers and Geotechnics*, p. 104018. DOI: 10.1016/j.compgeo.2021.104018.
- Staubach, P., Machaček, J., Skowronek, J., and Wichtmann, T. (Feb. 2021). "Vibratory pile driving in water-saturated sand: Back-analysis of model tests using a hydro-mechanically coupled CEL method". In: *Soils and Foundations* 61.1, pp. 144–159. DOI: 10.1016/j.sandf.2020.11.005.
- Staubach, P., Machaček, J., Tschirschky, L., and Wichtmann, T. (Nov. 20, 2021). "Enhancement of a high-cycle accumulation model by an adaptive strain amplitude and its application to monopile foundations". In: *International Journal for Numerical and Analytical Methods in Geomechanics*, nag.3301. ISSN: 0363-9061, 1096-9853. DOI: 10.1002/nag.3301.

- Staubach, P., Machaček, J., and Wichtmann, T. (Dec. 2021). "Large-deformation analysis of pile installation with subsequent lateral loading: Sanisand vs. Hypoplasticity". In: *Soil Dynamics and Earthquake Engineering* 151, p. 106964. DOI: 10.1016/j.soildyn.2021.106964.
- 2020 Staubach, P., Machaček, J., Moscoso, C., and Wichtmann, T. (Nov. 2020). "Impact of the installation on the long-term cyclic behaviour of piles in sand: A numerical study". In: *Soil Dynamics and Earthquake Engineering* 138, p. 106223. DOI: 10.1016/j.soildyn.2020.106223.
- 2019 Staubach, P. and Machaček, J. (Aug. 2019b). "Influence of relative acceleration in saturated sand: Analytical approach and simulation of vibratory pile driving tests". In: *Computers and Geotechnics* 112, pp. 173–184. DOI: 10.1016/j.compgeo.2019.03.027.
- Wichtmann, T., Machaček, J., Zachert, H., and Günther, H. (Feb. 2019). "Validierung eines hochzyklischen Akkumulationsmodells anhand von Modellversuchen und Messungen an realen Bauwerken". In: *Bautechnik* 96.2, pp. 160–175. ISSN: 0932-8351, 1437-0999. DOI: 10.1002/bate.201800056.
- 2018 Machaček, J., Triantafyllidis, T., and Staubach, P. (Dec. 2018). "Fully coupled simulation of an opencast mine subjected to earthquake loading". In: *Soil Dynamics and Earthquake Engineering* 115, pp. 853–867. DOI: 10.1016/j.soildyn.2018.09.016.
- Machaček, J., Wichtmann, T., Zachert, H., and Triantafyllidis, T. (May 2018). "Long-term settlements of a ship lock: Measurements vs. FE-prediction using a high cycle accumulation model". In: *Computers and Geotechnics* 97, pp. 222–232. DOI: 10.1016/j.compgeo.2018.01.009.
- Chapters and Inproceedings (peer-reviewed, 8)**
- 2024 Zeng, S., Machaček, J., and Taiebat, M. (Feb. 2024). "Automatic Calibration Tool for Efficient Parameter Optimization of SANISAND Models under Cyclic Loading". In: *Geo-Congress 2024: Geotechnical Data Analysis and Computation*. Geo-Congress 2024. Ed. by T. M. Evans. Vancouver, British Columbia, Canada: ASCE, pp. 297–306. ISBN: 978-0-7844-8534-7. DOI: 10.1061/9780784485347.030.
- 2023 Brosz, F., Machaček, J., and Zachert, H. (July 2023). "Automatic Parameter Calibration of Two Sophisticated Soil Models Based on Monotonic and Cyclic Tests on Sand". In: *Proceedings 10th NUMGE 2023*. 10th European Conference on Numerical Methods in Geotechnical Engineering. Imperial College, London. DOI: 10.53243/NUMGE2023-415.
- Machaček, J., Siegel, S., Staubach, P., and Zachert, H. (2023). "Automatic Parameter Calibration of Two Advanced Constitutive Models". In: *Challenges and Innovations in Geomechanics*. Ed. by M. Barla, A. Di Donna, D. Sterpi, and A. Insana. Vol. 288. Series Title: Lecture Notes in Civil Engineering. Cham: Springer International Publishing, pp. 110–117. ISBN: 978-3-031-12850-9 978-3-031-12851-6. DOI: 10.1007/978-3-031-12851-6_14.
- Machaček, J. and Staubach, P. (July 2023b). "One-Point Integrated Hourglass-Enhanced u-U Elements with Mortar Fluid-Phase Contact and Sanisand Interface". In: *Proceedings 10th NUMGE 2023*. 10th European Conference on Numerical Methods in Geotechnical Engineering. Imperial College, London. DOI: 10.53243/NUMGE2023-168.

Nitsch, A., Machaček, J., Wichtmann, T., and Grandas Tavera, C. E. (July 2023a). "An Extended Theory of Porous Media for Expansive Soils". In: *Proceedings 10th NUMGE 2023*. 10th European Conference on Numerical Methods in Geotechnical Engineering. Imperial College, London. DOI: 10.53243/NUMGE2023-379.

Wichtmann, T., Tafili, M., Staubach, P., and Machaček, J. (July 2023). "Soil Behaviour under Cyclic Loading – Experiments, Constitutive Modelling and Numerical Applications". In: *Proceedings 10th NUMGE 2023*. 10th European Conference on Numerical Methods in Geotechnical Engineering. Imperial College, London. DOI: 10.53243/NUMGE2023-435.

2022 Machaček, J., Nitsch, A., and Grandas Tavera, C. E. (Sept. 13, 2022). "An extended TPM for the coupled hydro-mechanical simulation of expansive soils". In: *Numerical Methods in Geotechnics 2022 - Proceedings*. Numerical Methods in Geotechnics 2022. Vol. 53. Veröffentlichungen des Instituts für Geotechnik und Baubetrieb. Hamburg: Hamburg University of Technology (TUHH). ISBN: 978-3-936310-55-9. DOI: 10.15480/882.4607.

Wichtmann, T., Tafili, M., Machaček, J., Staubach, P., and Prada-Sarmiento, L. F. (Sept. 13, 2022). "Influence of the constitutive model on the prediction of the long-term behaviour of monopiles in sand". In: *Numerical Methods in Geotechnics 2022 - Proceedings*. Numerical Methods in Geotechnics 2022. Vol. 53. Veröffentlichungen des Instituts für Geotechnik und Baubetrieb. Hamburg: Hamburg University of Technology (TUHH). ISBN: 978-3-936310-55-9. DOI: 10.15480/882.4607.

Inproceedings (16)

2023 Brosz, F., Machaček, J., Siegel, S., and Zachert, H. (Nov. 2023). "Automatische Parameterkalibrierung bodenmechanischer Stoffmodelle". In: *Ohde Kolloquium 2023*. Karlsruhe, pp. 12–16.

Knittel, L., Machaček Jan, J., Gehring, S., Raabe, P., Dahmen, D., Wichtmann, T., and Stutz, H. (Sept. 12, 2023). "Verflüssigungswiderstand eines Tagebau-Kippenbodens bei irregulärer Erdbebenanregung". In: *Vorträge der Fachsektionstage Geotechnik - Interdisziplinäres Forum 2023*. 4. Bodenmechanik-Tagung, Fachsektionstage Geotechnik – Interdisziplinäres Forum 2023. Würzburg: Deutsche Gesellschaft für Geotechnik e.V. (DGGT). ISBN: 978-3-946039-10-5.

Nitsch, A., Machaček, J., Grandas Tavera, C. E., and Wichtmann, T. (Sept. 12, 2023). "Zur Numerischen Simulation expansiver Geomaterialien mit der Finite-Elemente-Methode". In: *Vorträge der Fachsektionstage Geotechnik - Interdisziplinäres Forum 2023*. 4. Bodenmechanik-Tagung, Fachsektionstage Geotechnik – Interdisziplinäres Forum 2023. Würzburg: Deutsche Gesellschaft für Geotechnik e.V. (DGGT). ISBN: 978-3-946039-10-5.

Tschirschky, L., Staubach, P., Machaček, J., Bienen, B., and Wichtmann, T. (Nov. 2023). "Zur numerischen Untersuchung des Langzeitverhaltens von Suction Caisson Gründungen unter zyklischer Belastung". In: *Ohde Kolloquium 2023*. Karlsruhe, pp. 35–38.

Wegener, D., Staubach, P., Machaček, J., and Wichtmann, T. (Sept. 21, 2023). "Ermittlung bleibender Bodenverformungen von dynamisch belasteten Flachgründungen". In: *Vorträge Zum 17. Hans Lorenz Symposium*. Hans Lorenz Symposium. Vol. X. Berlin: Frank Rackwitz, pp. 105–131.

Wichtmann, T., Tafili, M., Staubach, P., Machaček, J., Schmüdderich, C., and Lieske, W. (Sept. 22, 2023). "Perspectives, Demands and Challenges of Future Research in Soil Mechanics and Soil Dynamics". In: *Tagungsband Zum Workshop Herausforderungen in Der Geotechnik - 25 Jahre Institut Für Geotechnik Und Baubetrieb 2023 an Der TUHH*.

Herausforderungen in Der Geotechnik - 25 Jahre Institut Für Geotechnik Und Baubetrieb. Vol. Veröffentlichungen des Instituts für Geotechnik und Baubetrieb der Technische Universität Hamburg. 58. Hamburg, Deutschland. ISBN: 978-3-936310-60-3.

- 2022 Machaček, J., Brosz, F., Staubach, P., Wichtmann, T., and Zachert, H. (May 18, 2022). "Back-calculations of Centrifuge Tests on Pile Groups Subjected to High-cyclic Loading". In: DFI-EFFC International Conference on Deep Foundations and Ground Improvement: Smart Construction for the Future. Berlin: Deep Foundations Institute, pp. 534–544.
- Staubach, P. and Machaček, J. (2022). "Langzeitverhalten von hochzyklisch beanspruchten Pfahlgründungen unter Berücksichtigung des Installationsprozesses". In: 37. *Baugrundtagung*. Wiesbaden: Deutsche Gesellschaft für Geotechnik e.V. (DGGT).
- Staubach, P., Machaček, J., and Wichtmann, T. (2022a). "Impact of the constitutive contact model on the simulation of model tests on monopiles with high-cyclic loading". In: *Proceedings of the 20th international conference on soil mechanics and geotechnical engineering, sydney 2022*. Sydney, pp. 2685–2690.
- 2021 Machaček, J. and Staubach, P. (2021). "numgeo: A finite-element program for the simulation of hydro-mechanically coupled geotechnical processes". In: 3. Bodenmechanik-Tagung. Würzburg: Deutsche Gesellschaft für Geotechnik e.V.
- Machaček, J., Staubach, P., Tafili, M., Zachert, H., and Wichtmann, T. (2021b). "Performance of different constitutive soil models: from element tests to the simulation of vibratory pile driving tests". In: *16th edition of the International Conference on Computational Plasticity*. 16th edition of the International Conference on Computational Plasticity. CIMNE. DOI: 10.23967/complas.2021.057.
- Nitsch, A., Leuthold, J., Machaček, J., Wichtmann, T., and Grandas Tavera, C. E. (July 7, 2021). "Experimental investigations of the stress-dependent swelling behavior of reconstituted claystone". In: 24. Symposium Felsmechanik und Tunnelbau, Fachsektionstage Geotechnik 2021. Würzburg: Deutsche Gesellschaft für Geotechnik e.V.
- 2019 Kimmig, I., Machaček, J., and Triantafyllidis, T. (Oct. 29, 2019). "Numerische Modellierung der Rütteldruckverdichtung in gesättigten Böden mit benutzerdefinierten Zweiphasen-Bodenelementen". In: *Fachsektionstage Geotechnik - Interdisziplinäres Forum: 29.-30. Oktober 2019, Congress Centrum Würzburg: Tagungsband*. Deutsche Gesellschaft für Geotechnik e.V. (DGGT). ISBN: 978-3-946039-06-8.
- Machaček, J., Fuentes Lacouture, W. M., and Triantafyllidis, T. (Oct. 29, 2019). "A Theory of Porous Media for soils with residual water and occluded air". In: *Fachsektionstage Geotechnik - Interdisziplinäres Forum: 29.-30. Oktober 2019, Congress Centrum Würzburg: Tagungsband*. Deutsche Gesellschaft für Geotechnik e.V. (DGGT), pp. 384–389. ISBN: 978-3-946039-06-8.
- Staubach, P. and Machaček, J. (2019a). "Einfluss der Relativbeschleunigung bei dynamischer Beanspruchung von Mehrphasenmedien am Beispiel der Vibrationsrammung". In: *Tagungsband der Fachsektionstage Geotechnik*. Place: Würzburg. Würzburg: Deutsche Gesellschaft für Geotechnik e.V. (DGGT), pp. 340–345. ISBN: 978-3-946039-06-8.
- 2017 Machaček, J. and Triantafyllidis, T. (June 9, 2017). "Numerische Untersuchung einer vollständig und teilweise gesättigten Böschung unter Erdbebeneinwirkung". In: *Fachsektionstage Geotechnik: interdisziplinäres Forum*. Fachsektionstage Geotechnik: interdisziplinäres Forum. Congress Centrum Würzburg: German Geotechnical Society, p. 6.

[Presentations without proceedings](#)

- 2023 Canales Brenlla, L., Tafili, M., Koch, F., [Machaček, J.](#), Tschirschky, L., Prada-Sarmiento, L. F., Staubach, P., and Wichtmann, T. (Sept. 8, 2023). "Influence of the Calibration Procedure of HCA Parameters on the Predicted Long-Term Monopile Deformations". Presentation. 1st SINO-GERMAN Offshore Geotechnics Workshop "From Installation to End-of-Life of Monopile Foundations" (Karlsruhe).
- 2022 Zachert, H. and [Machaček, J.](#) (Nov. 15, 2022). "The high-cycle accumulation model for sand: its fundamentals, applications and challenges". ELGIP Workshop on Offshore Geotechnics. ETH Zurich.
- 2021 [Machaček, J.](#) (Sept. 28, 2021). "Installation of piles: Simulation strategies and influence on the long-term behavior under high-cycling loading". Wind Turbine Technology, Workshop 2: Study of structural and foundation systems of Wind Turbines. University of Patras, Greece.

[Data](#)

- 2022 Beroya-Eitner, M. A., [Machaček, J.](#), Viggiani, G., Dastider, A. G., Thorel, L., Korre, E., Agalianos, A., Jafarian, Y., Zwanenburg, C., Lenart, S., Wang, H., Zachert, H., and Stanier, S. (Dec. 20, 2022). *GEOLAB Material Properties Database*. Version Number: 1.0 Type: dataset. DOI: 10.5281/ZENODO.7462287.