

List of publications

Dr. Philip J. Broser

May 16, 2025

1 Peer reviewed published research

1.1 First or Last Author

1. Marlen Kruse, Simon Nordenström, Stefan Hartwig, Justus Marquetand, Victor Lebedev, Thomas Middelman, and Philip J Broser. Magnetic vector field mapping of the stimulated abductor digiti minimi muscle with optically pumped magnetometers. *Biomed. Phys. Eng. Express*, 11(2), February 2025
2. L Bischoff, A Tschertter, S Hunziker, S Grunt, N. Graf, Ch Kuenzle, and PJ Broser. Pain in children and adolescents with cerebral palsy: A cross-sectional survey. *Neuropediatrics*, 2024(1.947) ¹
3. PJ Broser and J Luetschg. Erworbene polyneuropathien im kindesalter. *Neuropädiatrie in Klinik und Praxis*, 23(3):110 – 118, 2024
4. S Oberhauser, D. l'Allemand, E. P. Willems, T. Gozzi, K. Heldt, M. Eilers, A. Stasinaki, J. Lutschg, and P. J. Broser. The slowing of peripheral nerve conduction velocity in children and adolescents with type 1 diabetes is predicted by glucose fluctuations. *Diabetes*, Sep 2023(7.7)
5. N. Alexander, J. Cip, E Müller, K. Lengnick-Lampadius, and P. J. Broser. Gait is not Affected by Hemispherotomy-Case Report from Two Children. *Neuropediatrics*, Mar 2023 (1.947)
6. C. Jenny, J. van der Linde, T. Hundsberger, and P. J. Broser. Correlation between age and the sciatic nerve diameter in the first 2 years of life: A high-resolution ultrasound study. *Brain Behav*, 13(4):e2944, Apr 2023 (2.708)
7. J. van der Linde, C. Jenny, T. Hundsberger, and P. J. Broser. Correlation of age and the diameter of the cervical nerve roots C5 and C6 during the first 2 years of life analyzed by high-resolution ultrasound imaging. *Brain Behav*, 12(8):e2649, Aug 2022 (2.708)

¹Impactfactor, Science Citation Index

8. P. Broser, U. von Mengershausen, K. Heldt, D. Bartholdi, D. Braun, C. Wolf, and M. A. Lee-Kirsch. Precision treatment of Singleton Merten syndrome with ruxolitinib: a case report. *Pediatr Rheumatol Online J*, 20(1):24, Apr 2022 (3.497)
9. N. Alexander and P. Broser. Counter-movement jump characteristics in children with Charcot-Marie-Tooth type 1a disease. *Gait Posture*, 93:218–224, Feb 2022 (2.16)
10. P. J. Broser, J. Marquetand, T. Middelmann, D. Sometti, and C. Braun. Investigation of the temporal and spatial dynamics of muscular action potentials through optically pumped magnetometers. *J Electromyogr Kinesiol*, 59:102571, Aug 2021 (1.740)
11. J. Marquetand, T. Middelmann, J. Dax, S. Baek, D. Sometti, A. Grimm, H. Lerche, P. Martin, C. Kronlage, M. Siegel, C. Braun, and P. Broser. Optically pumped magnetometers reveal fasciculations non-invasively. *Clin Neurophysiol*, 132(10):2681–2684, 10 2021 (3.214)
12. Marquetand J., T. Middelmann, D. Sometti, C. Braun, and P. J. Broser. Nicht-invasive magnetomyographie mittels optisch gepumpter magnetometer (opm) - charakteristika des muskelaktionspotentials. *Klinische Neurophysiologie*, 52:250–258, 2021 (0.27)
13. P. J. Broser and J. Luetschg. Funktion und Struktur peripherer Nerven aus neuropaediatrischer Sicht. *Klinische Neurophysiologie*, 52:239–249, 2021 (0.27)
14. P. J. Broser, T. Middelmann, D. Sometti, and C. Braun. Optically pumped magnetometers disclose magnetic field components of the muscular action potential. *J Electromyogr Kinesiol*, 56:102490, Feb 2021 (1.740)
15. C. Jenny, J. Luetschg, and P. J. Broser. Change in cross-sectional area of the median nerve with age in neonates, infants and children analyzed by high-resolution ultrasound imaging. *European Journal of Paediatric Neurology*, 2020 (2.496)
16. P. J. Broser and J. Luetschg. Die Bedeutung neurophysiologischer Methoden in der Abklaerung neuropaediatrischer und neuromuskulaerer Erkrankungen. *Monatsschrift Kinderheilkunde*, 2019 (0.353)
17. P. J. Broser and J. Luetschg. Elektroneurografische und elektromyografische Diagnostik in der Neuropaediatric. *Klinische Neurophysiologie*, 2019 (0.325)
18. P. J. Broser, S. Knappe, D. S. Kajal, N. Noury, O. Alem, V. Shah, and C. Braun. Optically Pumped Magnetometers for Magneto-Myography to Study the Innervation of the Hand. *IEEE Trans Neural Syst Rehabil Eng*, 26(11):2226–2230, Nov 2018 (3.410)

19. D. Zieglgaensberger and P. Broser. Epilepsie-Behandlung - Grundsätze der medikamentösen Therapie. *InFo Neurologie u. Psychiatrie*, 33:95–101, 2018
20. Philip Broser and Oliver Maier. Frühe infantile epileptische Enzephalopathien. *Epileptologie*, 33:95–101, 2016
21. Philip J Broser, Veronika Moor, and Christoph Braun. A non-magnetic rotating disk stimulator for the study of neuromagnetic correlates of sensorimotor interaction. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 23(6):1078–1084, 2015 (3.410)
22. Melanie Ginger, Philip Broser, and Andreas Frick. Three-dimensional tracking and analysis of ion channel signals across dendritic arbors. *Frontiers in neural circuits*, 7, 2013 (3.005)
23. Philip J Broser and Christoph Braun. Hydraulic driven fast and precise nonmagnetic tactile stimulator for neurophysiological and meg measurements. *IEEE Transactions on Biomedical Engineering*, 59(10):2852–2858, 2012 (3.577)
24. Philip Julian Broser, Samuel Groeschel, Till-Karsten Hauser, Karen Lidzba, and Marko Wilke. Functional mri-guided probabilistic tractography of cortico-cortical and cortico-subcortical language networks in children. *NeuroImage*, 63(3):1561–1570, 2012 (5.835)
25. Philip Broser, Faraneh Vargha-Khadem, and Chris A Clark. Robust subdivision of the thalamus in children based on probability distribution functions calculated from probabilistic tractography. *Neuroimage*, 57(2):403–415, 2011 (5.835)
26. Philip J Broser, Sezgin Erdogan, Valery Grinevich, Pavel Osten, Bert Sakmann, and Damian J Wallace. Automated axon length quantification for populations of labelled neurons. *Journal of neuroscience methods*, 169(1):43–54, 2008 (2.554)
27. Marcel Oberlaender, Randy M Bruno, Bert Sakmann, and Philip J Broser. Transmitted light brightfield mosaic microscopy for three-dimensional tracing of single neuron morphology. *Journal of biomedical optics*, 12(6):064029–064029, 2007 (2.530)
28. P Broser, Valery Grinevich, Pavel Osten, Bert Sakmann, and DJ Wallace. Critical period plasticity of axonal arbors of layer 2/3 pyramidal neurons in rat somatosensory cortex: layer-specific reduction of projections into deprived cortical columns. *Cerebral Cortex*, 18(7):1588–1603, 2007 (6.559)
29. Philip J Broser, Roland Schulte, Stefan Lang, A Roth Fritjof, Helmchen Waters, Bert Sakmann, G Wittum, et al. Nonlinear anisotropic diffusion filtering of three-dimensional image data from two-photon microscopy. *Journal of biomedical optics*, 9(6):1253–1264, 2004 (2.530)

1.2 Other Position

1. Nima Noury, Justus Marquetand, Stefan Hartwig, Thomas Middelmann, Philip Broser, and Markus Siegel. Detecting single motor-unit activity in magnetomyography. *Journal of Neural Engineering*, in Press(IF: 4.538)
2. S. Nordenström, V. Lebedev, S. Rodriguez, S. Hartwig, M. Kruse, P. J. Broser, J. Marquetand, and T. Middelmann. Magnetomyography with optically pumped magnetometers. In Clarice Aiello, Sergey V. Polyakov, and Paige Derr, editors, *Quantum Effects and Measurement Techniques in Biology and Biophotonics II*, volume 13340, page 1334007. International Society for Optics and Photonics, SPIE, 2025
3. Simon Nordenström, Victor Lebedev, Stefan Hartwig, Marlen Kruse, Justus Marquetand, Philip Broser, and Thomas Middelmann. Feasibility of magnetomyography with optically pumped magnetometers in a mobile magnetic shield. *Sci. Rep.*, 14(1):18960, August 2024(IF: 4.6)
4. L Bischoff, A Tschertter, S Hunziker, P Broser, and Ch Kuenzle. Schmerzen bei zerebralparese - eine populationsbasierte studie mit kindern und jugendlichen. *Pädiatrie*, pages 23/1–23/5, 2023
5. L. Semeia, T. Middelmann, S. Baek, D. Sometti, H. Chen, A. Grimm, H. Lerche, P. Martin, C. Kronlage, C. Braun, P. Broser, M. Siegel, M. S. Breu, and J. Marquetand. Optically pumped magnetometers detect altered maximal muscle activity in neuromuscular disease. *Front Neurosci*, 16:1010242, 2022 (5.152)
6. E. M. Wendel, H. S. Thonke, A. Bertolini, M. Baumann, A. Blaschek, A. Merckenschlager, M. Karenfort, B. Kornek, C. Lechner, D. Pohl, M. Pritsch, K. Schanda, M. Schimmel, C. Thiels, S. Waltz, G. Wiegand, B. Anlar, N. Barisic, C. Blank, M. Breu, P. Broser, A. Della Marina, K. Diepold, M. Eckenweiler, A. Eisenkölbl, M. Freilinger, U. Gruber-Sedlmayr, A. Hackenberg, T. Iff, E. Knierim, J. Koch, G. Kutschke, S. Leiz, G. Lischetzki, M. Nosadini, A. Pschibul, E. Reiter-Fink, D. Rohrbach, M. Salandin, S. Sartori, J. U. Schlump, J. Stoffels, J. Strautmanis, D. Tibussek, V. Tüngler, N. Utzig, M. Reindl, and K. Rostásy. Temporal Dynamics of MOG Antibodies in Children With Acquired Demyelinating Syndrome. *Neurol Neuroimmunol Neuroinflamm*, 9(6), Nov 2022 (IF: 7.8)
7. D. Sometti, L. Semeia, S. Baek, H. Chen, G. Righetti, J. Dax, C. Kronlage, M. Kirchgässner, A. Romano, J. Heilos, D. Staber, J. Oppold, T. Middelmann, C. Braun, P. Broser, and J. Marquetand. Muscle Fatigue Revisited - Insights From Optically Pumped Magnetometers. *Front Physiol*, 12:724755, 2021 (4.134)
8. C. T. Ruesch, U. Knirsch, D. M. Weber, M. Rohrbach, A. Eichenberger, J. Luetsch, K. Weber, P. J. Broser, and G. M. Stettner. Etiology of Carpal

Tunnel Syndrome in a Large Cohort of Children. *Children (Basel)*, 8(8), Jul 2021 (3.091)

9. Jan Henje Döring, Afshin Saffari, Thomas Bast, Knut Brockmann, Laura Ehrhardt, Walid Fazeli, Wibke G. Janzarik, Gerhard Kluger, Hiltrud Muhle, Rikke S. Møller, Konrad Platzer, Joana Larupa Santos, Iben Bache, Astrid Bertsche, Michaela Bonfert, Ingo Borggräfe, Philip J. Broser, Alexandre N. Datta, Trine Bjørg Hammer, Hans Hartmann, Anette Hasse-Wittmer, Marco Henneke, Hermann Kühne, Johannes R. Lemke, Oliver Maier, Eva Matzker, Andreas Merckenschlager, Joachim Opp, Steffi Patzer, Kevin Ros-tasy, Birgit Stark, Adam Strzelczyk, Celina von Stülpnagel, Yvonne We-ber, Markus Wolff, Birgit Zirn, Georg Friedrich Hoffmann, Stefan Kölker, and Steffen Syrbe. The phenotypic spectrum of prrt2-associated paroxys-mal neurologic disorders in childhood. *Biomedicines*, 8(11), 2020 (0.517)
10. S. C. Disse, S. P. Toelle, S. Schroeder, M. Theiler, L. Weibel, P. Broser, C. Langner, D. Siegel, K. Brockmann, I. Schoenfelder, and S. Meyer. Epi-demiology, Clinical Features, and Use of Early Supportive Measures in PHACE Syndrome: A European Multinational Observational Study. *Neu-roepidemiology*, pages 1–9, Jul 2020 (3.282)
11. J. Heckmann, M. Todorova, S. Mueller, P. J. Broser, and V. Sturm. First Clinical Experience with Anti-myelin Oligodendrocyte Glycopro-tein Antibody-Positive Optic Neuritis. *Klin Monbl Augenheilkd*, Feb 2020 (0.792)
12. Verena C Wimmer, Philip J Broser, Thomas Kuner, and Randy M Bruno. Experience-induced plasticity of thalamocortical axons in both juveniles and adults. *Journal of Comparative Neurology*, 518(22):4629–4648, 2010 (3.266)
13. M Oberlaender, PJ Broser, B Sakmann, and S Hippler. Shack-hartmann wave front measurements in cortical tissue for deconvolution of large three-dimensional mosaic transmitted light brightfield micrographs. *Journal of microscopy*, 233(2):275–289, 2009 (1.692)

2 Preprints and Manuscripts in review

2.1 In review

1. Bürke, Jansen, West, Wurster, and Broser. Examination of the relation-ship between the maturation of the central and peripheral nervous systems in infants. *Brain Behav*, in review (IF: 2.708*)
2. Tschertter, Broser Steiner, et al, Stettner, and Klein. Real-world data on the effect of long-term treatment with nusinersen over 4 years in a cohort of swiss patients with spinal muscular atrophy. *Clinical Neurology and Neurosurgery*, 2025 (IF: 2.4*)

3. Wurster, West, Meier, Bürke, Jansen, and Broser. Examination of the peripheral nervous system in children with spinal muscular atrophy: A high-resolution ultrasonographic study. *Brain Behav*, in review (IF: 2.708*)

2.2 Preprints

1. Marc Robin Gruener, Erin West, Ute Muhitira, Katrin Heldt, Sarah Oberhauser, Dagmar l'Allemand, Mia Jovanova, Tobias Kowatsch, and Philip Broser. Assessing glucose variability metrics: Nerve conduction velocity in children and adolescents with type 1 diabetes. *medRxiv*, 2025



2. Philip J. Broser, Thomas Middelmann, Nima Noury, Markus Siegel, Stefan Hartwig, Thomas Klotz, and Justus Marquetand. Quantitative and geometric motor unit analysis using magnetomyography. *medRxiv*, 2023
3. Oberhauser S., D. l'Allemand, Luetschg J., and Broser P. Peripheral nerve conduction speed shows a disease control-dependent and -independent drop in type 1 diabetes mellitus in children. *Medarchives*, 2022

3 Monographs

3.1 Patientenratgeber

1. Klein and Bienek. Gil, tomate und der seltsame kurzschluss, gils geschichte mit dem gbs, November 22 2006. Beratung durch P. Broser



3.2 PhD and Masterthesis

1. Philip Julian Broser. Axonal arbor plasticity of the developing neocortex. 2007
2. Philip Julian Broser. *Morphologische Bildoperatoren für die quantitative Neurobiologie*. PhD thesis, 2006
3. Philip Julian Broser. *Simulation von Strömungen in Blutgefäßen*. PhD thesis, Ruprecht- Karls- Universität Heidelberg Heidelberg, 2002

3.3 Other

1. L Bischoff, A Tschertter, S Hunziker, P Broser, and Ch Kuenzle. Schmerzen bei zerebralparese - eine populationsbasierte studie mit kindern und jugendlichen. *Pädiatrie*, pages 23/1–23/5, 2023
2. P. J. Broser. Case report. In Manuel Stier and Christine Maier, editors, *Seltene Krankheiten*, pages 108–109. Foerderverein fuer Kinder mit seltenen Krankheiten, User, Ch, 2018
3. A Leiber, K Lengnick, A Lang, P Broser, and O Maier. Retrospective analysis of treatment strategy and outcome in infantile spasms in the neuropediatric department of st. gallen. *SWISS MEDICAL WEEKLY*, 147:34–34, 2017
4. Philip Broser, Alexander Heusel, Daniel Jungblut, Gillian Queisser, Sebastian Reiter, Roland Schulte, Christine Voßen, and Gabriel Wittum. A2. 1, m8, t6: Neura: The neuron reconstruction algorithm. *G-CSC Report 2010*, page 19, 2010
5. Philip J Broser and Marcel Oberländer. Reconstruction and visualization of neuronal cell structures with bright-field mosaic microscopy, November 22 2006. US Patent App. 12/513,424
6. Philip Broser, Lain Mencia, and Christian Lozanoski. Der kleinste kopierer der welt - die polymerase chain reaction (pcr). *junge wissenschaft*, 13(49):40–42, 1998

4 Invited Talks 2024

1. PJ Broser. Workshop: Emg and ep in pediatric, evoked potential technique and applications in pediatric patients. International congress on clinical neurophysiology, Jakarta, 2024
2. PJ Broser. Management of neuromuscular hyperexcitability in children. International congress on clinical neurophysiology, Jakarta, 2024
3. PJ Broser. Session: Nerven am kopf-hals-ist mehr auch mehr nutzen?, plexus brachialis. *Ultraschall 2024*, 47. DLT, Ögum, DEGUM, SGUM, 2024
4. PJ Broser. Round table, polyneuropathien – find them early, treat them timely. *Ultraschall 2024*, 47. DLT, Ögum, DEGUM, SGUM, 2024
5. PJ Broser. Update modul: Pädiatrische neurophysiologie: Was kann die neurosonographie? Gesellschaft für Neuropädiatrie Tagung, 2024
6. PJ Broser. Skillslab: Nervensonographie. Gesellschaft für Neuropädiatrie Tagung, 2024

7. P.J. Broser. Pädiatrische neurophysiologie. Deutsche Gesellschaft für klinische Neurophysiologie, 2024

5 Conference Abstracts

1. P. Broser, S. Oberhauser, J. Lütschg, and D. Lallemand. N° 205–peripheral nerve conduction speed is reduced in children and adolescents with type 1 diabetes mellitus, but is only in part predicted by glycaemic control. *Clinical Neurophysiology*, 150:e138, 2023
2. Sarah Oberhauser, Dagmar l’Allemand, Katrin Heldt, Tiziana Gozzi, Aikaterini Stasinaki, Miriam Eilers, Jurg Lutschg, and Philip Broser. Peripheral nerve conduction velocity in children and young adults with type 1 diabetes mellitus as a marker of metabolic control. In *HORMONE RESEARCH IN PAEDIATRICS*, volume 95, pages 89–89. KARGER ALLSCHWILER-STRASSE 10, CH-4009 BASEL, SWITZERLAND, 2022
3. K. Heldt and P. Broser. Singleton-merten-syndrome-an interdisciplinary approach from diagnosis to targeted therapy. In *SWISS MEDICAL WEEKLY*, volume 152, pages 13S–14S. EMH SWISS MEDICAL PUBLISHERS LTD FARNSBURGERSTR 8, CH-4132 MUTTENZ, SWITZERLAND, 2022
4. P. Broser, J. Lütschg, and C. Jenny. P 49. change in cross-sectional area of the median nerve with age in neonates, infants and children analyzed by high-resolution ultrasound imaging. *Clinical Neurophysiology*, 132:e21–e22, 2021
5. C. Jenny and P. Broser. Analysis of the maturation of the median nerve in neonates, infants, and children using high-resolution ultrasound imaging. *Neuropediatrics*, 52(S 01):P1.18, 2021
6. P.J. Broser, T. Middelmann, D. Sometti, and C. Braun. P 52. optically pumped magnetometers disclose magnetic field components of the muscular action potential. *Clinical Neurophysiology*, 132(8):e24–e25, 2021
7. P. J. Broser. Optical pumped magnetometer for magnetomyography to study the nerval innervation pattern of the hand. In *DGKN 2019*. Deutsche Gesellschaft fuer klinische Neurophysiologie, 2019
8. P. J. Broser. Elektroneuromyographie zur differtialdiagnose von neuro-muskulaeren erkrankungen im kindesalter. In *DGKN 2019*. Deutsche Gesellschaft fuer klinische Neurophysiologie, 2019
9. C.T.Q. Huynh and P.J. Broser. Fv 48 early auditory evoked potentials as predictor of the subsequent neurocognitive development of children. *Clinical Neurophysiology*, 130(8):e143, 2019

10. Ursula von Mengershausen, Philip Broser, and Oliver Maier. P 1166. isolated oculomotor nerve palsy as primary manifestation of guillain–barré’s syndrome—a case report with focus on clinical and electrophysiological features. *Neuropediatrics*, 49(S 02):P1166, 2018
11. Philip Julian Broser, Oliver Maier, Oswald Hasselmann, and Jürg Lütschg. Fv 113. electrophysiological diagnostic of neuromuscular diseases in newborns, infants, and toddlers. *Neuropediatrics*, 49(S 02):FV113, 2018
12. P.J. Broser, O. Maier, O. Hasselmann, and J. Luetschg. Electrophysiological diagnostic of neuromuscular diseases in new-borns, infants and toddlers. In *Neurowoche 2018 - Abstracts*, volume 1, page 593. Deutsche Gesellschaft fuer Neurologie, 2018
13. D. Lekaditi and P Broser. Comparison of the early auditory evoked potentials during the first months of life in term and preterm children. In *Neurowoche 2018 - Abstracts*, volume 1, page 623. Deutsche Gesellschaft fuer Neurologie, 2018
14. P. J. Broser, S. Knappe, D. S. Kajal, N. Noury, O. Alem, V. Shah, and C. Braun. Optical pumped magnetometer for magnetomyography to study the nerval innervation pattern of the hand. In *Neurowoche 2018 - Abstracts*, volume 1, page 736. Deutsche Gesellschaft fuer Neurologie, 2018
15. P. Broser and O. Maier. Fv 8 an update on neurophysiological diagnostic in pediatric neurology. *Clinical Neurophysiology*, 128(10):e310, 2017
16. Philip J Broser and Oliver Maier. Clinical neurophysiology in child neurology—usefulness in the diagnostic process and guidance of therapy. *European Journal of Paediatric Neurology*, 21:e200, 2017 (2.013)
17. P Broser and O Maier. Ep 139. cortical maturation during the first years of life as assessed by steady state flicker vep. *Clinical Neurophysiology*, 127(9):e299–e300, 2016 (3.866)
18. P Broser, R Beschroner, M Ginger, S Rona, M Schuhmann, and J Honegger. V26. three dimensional tracking of ion channels on epileptogenic cortical neurons in focal dysplasia in humans. *Clinical Neurophysiology*, 126(8):e79, 2015 (3.866)
19. P Broser and C Braun. Development of a meg compatible method to study the interaction of the sensory and motor cortex in humans. *Klinische Neurophysiologie*, 45(01):P56, 2014
20. P Broser, S Groeschel, T Hauser, K Lidzba, and M Wilke. Pp8. 2–1914 functional mri-guided probabilistic tractography of cortico-cortical and cortico-subcortical language networks in children. *European Journal of Paediatric Neurology*, 17:S51, 2013 (2.013)

21. P Broser, S Gröschel, K Lidzba, T Hauser, and M Wilke. Lateralization of language pathways in children as assessed using fmri-guided probabilistic tractography. *Neuropediatrics*, 43(02):FV12_08, 2012 (1.571)
22. Marcel Oberlaender, Vincent J Dercksen, Philip J Broser, Randy M Bruno, and Bert Sakmann. Neuromorph and neurocount: Automated tools for fast and objective acquisition of neuronal morphology for quantitative structural analysis. In *Front. Neuroinform. Conference Abstract: Neuroinformatics*, 2008 (3.870)
23. PJ Broser, R Schulte, A Roth, F Helmehen, J Waters, S Lang, B Sakmann, and G Wittum. Nonlinear anisotropic diffusion filtering of three-dimensional image data from 2-photon microscopy. *Image Processing: Algorithms and Systems IV*, 5672:44–69, 2005