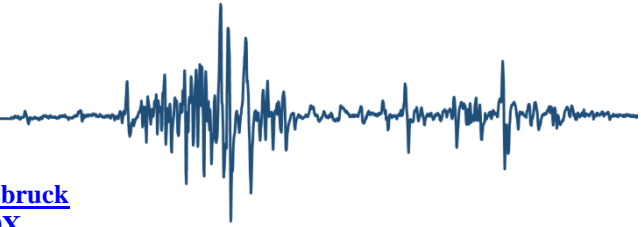


# MAURICE MOHR, PhD

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**Website:** [Staff profile at the University of Innsbruck](#)  
**ORCID:** <https://orcid.org/0000-0003-3726-730X>

## PROFILE

**Passionate scientist** and mountain sports enthusiast; **motivated** to prevent sport injuries; **expertise** in biomechanics, motor control, and muscle/joint function; **skillset** in 3D motion analysis, electrophysiology, signal processing and machine learning; enjoys working in a team and to engage in student mentoring

## EDUCATION

- 2015-2018     **Human Performance Laboratory, University of Calgary, Canada**  
Doctor of Philosophy (PhD) in Kinesiology with specialization in Biomechanics  
Supervisors Dr. Benno Nigg, Dr. Carolyn Emery  
Thesis: *The effects of previous knee injury on lower-extremity muscle activation and movement and implications for the development of knee osteoarthritis*
- 2014            **Human Performance Laboratory, University of Calgary, Canada**  
Master of Science (MSc) in Kinesiology (Transfer to PhD)
- 2009-2012     **Institute of Sports Science, Otto-von-Guericke University Magdeburg, Germany**  
Bachelor of science (BSc) in Sports and Technology

## RESEARCH EXPERIENCE

- 2021-present     **Department of Sport Science (ISW), University of Innsbruck, Austria**  
Assistant Professor in motor control and training science
- Conduct training studies to teach safer and more efficient movement strategies with the goal of injury prevention in sports
- 2019-2021       **Department of Sport Science (ISW), University of Innsbruck, Austria**  
Postdoctoral Fellow with Dr. Peter Federolf in the Neurophysiology Research Group
- Conduct research in motor control of athletic movements
- 2014-2019       **Biomechanigg Sport & Health Research, Calgary, Canada**  
Scientific consultant
- Collaborate with industry partners to improve the design and construction of sports shoes in the context of injury risk, comfort, and performance
- 2017  
Nov-Dec         **Laboratory of Movement Analysis and Measurement, École polytechnique fédérale  
Lausanne (EPFL), Switzerland**  
Visiting doctoral student  
Supervisor Dr. Kamiar Aminian
- Determine spatio-temporal gait variables related to performance in 400m hurdle running based on a foot-mounted inertial measurement unit
- 2013            **Human Performance Laboratory, University of Calgary**  
Research internship at Biomechanigg Research Inc.

## LIST OF PUBLICATIONS

### Peer-reviewed publications [Collaborative articles for “Kanada Preis 2021” marked in red]

van Andel S, Pieper R, Werner I, Wachholz F, **Mohr M**, Federolf P (2021). Implications of Optimal Feedback Control Theory for Sport Coaching and Motor Learning, a Systematic Review. *Accepted in Motor Control*.

Federolf P, Angulo-Barroso RM, Busquets A, Ferrer-Uris B, Gløersen Ø, **Mohr M**, Ó Reilly D, Promsri A, van Andel S, Wachholz F, Werner I, Zago M (2021). Letter to the editor in response to “The assessment of center of mass and center of pressure during quiet stance: Current applications and future directions” published in *Journal of Biomechanics*, on June 23rd 2021. *Journal of Biomechanics* 128:110729. <https://doi.org/10.1016/j.jbiomech.2021.110729>

**Mohr M**, Federolf P (2021). Fatigue-related reductions in movement smoothness during a lateral shuffle and side-cutting movement. *In Press at European Journal of Sports Science*. <https://doi.org/10.1080/17461391.2021.1960427>

**Mohr M**, Pieper R, Löffler S, Schmidt AR, Federolf P (2021). Sex-specific hip movement is correlated with pelvis and upper body rotation during running. *Frontiers in Bioengineering and Biotechnology* 9:657357. <https://doi.org/10.3389/fbioe.2021.657357>

Promsri A, **Mohr M**, Federolf P (2021). Principal postural acceleration and myoelectric activity: Interrelationship and relevance for characterizing neuromuscular function in postural control. *Human Movement Science* 77(2021): 102792. <https://doi.org/10.1016/j.humov.2021.102792>

**Mohr M**, von Tscharnner V, Nigg S, Nigg BM (2021). Systematic reduction of leg muscle activity throughout a standard assessment of running footwear. *Journal of Sport and Health Science (2021)*. *In Press, online first*. <https://doi.org/10.1016/j.jshs.2021.01.003>

Honert EC, **Mohr M**, Lam W, Nigg S (2020). Shoe Feature Recommendation for Different Running Levels: A Delphi Study. *PLoS ONE*. 15(7): e0236047. <https://doi.org/10.1371/journal.pone.0236047>

Hoitz F, **Mohr M**, Asmussen M, Lam WK, Nigg S, Nigg BM (2020). The Effects of Systematically Altered Footwear Features on Biomechanics, Injury, Performance, and Preference in Runners of Different Skill Level: A Systematic Review. *Footwear Science*. 12(3): 193-215. <https://doi.org/10.1080/19424280.2020.1773936>

Falbriard M, **Mohr M**, Aminian K (2020). Reply to Comments: Hurdle Clearance Detection and Spatiotemporal Analysis in 400 Meters Hurdles Races Using Shoe-Mounted Magnetic and Inertial Sensor. *Sensors*. 2020(10): 2993. <https://doi.org/10.3390/s20102993>

Wachholz F, Tiribello F, **Mohr M**, van Andel S, Federolf P (2020). Adolescent awkwardness?: Alterations in Temporal Control Characteristics of Posture with Maturation and the Relation to Movement Exploration. *Brain Sciences*. 10(4): 216. <https://doi.org/10.3390/brainsci10040216>

Falbriard M, **Mohr M**, Aminian K (2020). Hurdle clearance detection and spatiotemporal analysis in 400 meters hurdles races using shoe-mounted magnetic and inertial sensors. *Sensors*. 2020(2): 354. <https://doi.org/10.3390/s20020354>

**Mohr M**, von Tscharnner V, Emery CE, Nigg BM (2019). Classification of gait muscle activation patterns according to knee injury history using a support vector machine approach. *Human Movement Science*. 66:335-346. <https://doi.org/10.1016/j.humov.2019.05.006>

**Mohr M**, von Tscharnner V, Whittaker J, Emery CE, Nigg BM (2019). Quadriceps-hamstrings intermuscular coherence during single-leg squatting 3-12 years following a youth sport-related knee injury. *Human Movement Science*. 66: 273-284. <https://doi.org/10.1016/j.humov.2019.04.012>

Nigg BM, **Mohr M**, Nigg S (2019). Response to select comments on the proposed paradigm shifts in running. *Current Issues in Sport Science*. 4: 001. [https://doi.org/10.15203/CISS\\_2019.001](https://doi.org/10.15203/CISS_2019.001)

Nigg BM, Nigg S, **Mohr M.** (2018). Running Redefined – A Proposed Paradigm Shift. *Foot and Ankle Quarterly*. 29(4). *Current Concepts in Biomechanics*.

von Tscharnner V, Ullrich M, **Mohr M**, Comaduran Marquez D, Nigg BM (2018). Beta, gamma band and high frequency coherence of EMGs of vasti muscles caused by clustering of motor units. *Experimental Brain Research*. 236(11): 3065-3075. <https://doi.org/10.1007/s00221-018-5356-6>

**Mohr M**, Schoen T, von Tscharnner V, Nigg BM (2018). Intermuscular Coherence between Surface EMG Signals is Higher for Monopolar compared to Bipolar Electrode Configurations. *Front. Physiol.* 9:566. <https://doi.org/10.3389/fphys.2018.00566>

von Tscharnner V, Ullrich M, **Mohr M**, Comaduran D, Nigg BM (2018). A wavelet based time frequency analysis of electromyograms to group steps of runners into clusters that use similar muscle activation patterns. *PLoS ONE* 13(4): e0195125. <https://doi.org/10.1371/journal.pone.0195125>

Lam CK, **Mohr M**, Nigg S, Nigg BM (2018). Definition and quantification of ‘ride’ during running. *Footwear Science*. 10(2): 77-82. <https://doi.org/10.1080/19424280.2018.1453872>

**Mohr M**, Lorenzen K, Palacios-Derflingher L, Emery CE, Nigg BM (2018). The reliability of the muscle co-contraction index during gait in individuals with and without a history of knee injury. *Journal of Electromyography and Kinesiology*. 38: 17-27. <https://doi.org/10.1016/j.jelekin.2017.10.014>

Meyer C, **Mohr M**, Falbriard M, Nigg S, Nigg BM (2018). Influence of footwear comfort on variability of running kinematics. *Footwear Science*. 10 (1) 29-38: *Special Issue: The State of the Art in Footwear Science 2018*. <https://doi.org/10.1080/19424280.2017.1388296>

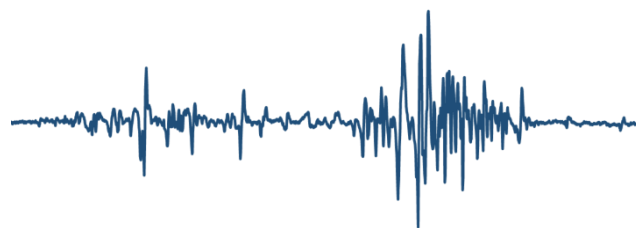
Nigg BM, **Mohr M**, Nigg S (2017). Muscle tuning and preferred movement path – a paradigm shift. *Current Issues in Sport Science*. 2:007. [https://doi.org/10.15203/CISS\\_2019.007](https://doi.org/10.15203/CISS_2019.007)

Nigg BM, Vienneau J, Smith AC, Trudeau MB, **Mohr M**, Nigg SR (2017). The preferred movement path paradigm: Influence of running shoes on joint movement. *Journal of Medicine and Science in Sports and Exercise*. 49(8). 1641-1648. <https://doi.org/10.1249/MSS.0000000000001260>

**Mohr M**, Trudeau M, Nigg S, Nigg BM (2016). Increased athletic performance in lighter basketball shoes: shoe or psychology effect? *Journal of International Sports Physiology and Performance*. 11(1): 74-79. <https://doi.org/10.1123/ijspp.2014-0538>

**Mohr M**, Nann M, Von Tscharnner V, Eskofier B, Nigg BM (2015) Task-dependent intermuscular motor unit synchronization between medial and lateral vastii muscles during dynamic and isometric squats. *PLoS ONE* 10(11): e0142048. <https://doi.org/10.1371/journal.pone.0142048>

**Mohr M**, Enders H, Nigg S, Nigg BM (2015). The effect of shoe weight on sprint performance: a biomechanical perspective. *Journal of Ergonomics*. S6:001. <http://dx.doi.org/10.4172/2165-7556.S6-001>.



Innsbruck, December 2021