

Borut Fonda

Doctoral Researcher

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About

PhD Title: Control parameters in bike fitting for improving safety and comfort during cycling

Supervisors: Dr François-Xavier Li, Dr Michael J. Grey

Borut is a former internationally recognized cyclist in the Olympic discipline Cross Country. He remained active in cycling as a coach and sport scientist to many successful athletes.

Qualifications

- BSc (2010): University in Ljubljana, Faculty of sport (Physical conditioning)
- MSc (2012): University of Primorska, Applied kinesiology (Exercise physiology)

Biography

Borut did undergraduate work on cycling biomechanics and motor control with special emphasis on inter-muscular coordination during uphill cycling.

Research

Borut's research interest is studying human motor control, biomechanics, ergonomics and injury prevention during cycling. His main objective is to provide guidelines for optimal bike fitting.

Other activities

Borut is in a continuous research as a collaborator of a scientific-research group in the company S2P, Science to Practice, Ltd. (Ljubljana, Slovenia). His work is related to the development of innovative solutions primarily in the field of sports and rehabilitation medicine. He is also member of the editorial board of the Journal of Science in Cycling.

Publications

Original scientific articles

- FONDA, Borut, PANJAN, Andrej, MARKOVIČ, Goran, ŠARABON, Nejc. Adjusted saddle position counteracts the modified muscle activation patterns during uphill cycling. *Journal of electromyography and kinesiology.*, 2011, vol.21, iss. 5, pp. 854-860.
- ŠARABON, Nejc, FONDA, Borut, MARKOVIČ, Goran. Change of muscle activation patterns in uphill cycling of varying slope. *Eur. j. appl. physiol.*, 2011, ahead of print, pp. 1-9 .
- FONDA, Borut, ŠARABON, Nejc. Inter-muscular coordination during uphill cycling in a seated position: a pilot study. *Kinesiol. Slov.*, 2010, vol. 16, iss. 1/2, pp. 10-15.
- FONDA, Borut, ŠARABON, Nejc. Effects of adjusting seat position and seat tilt during uphill cycling (pilot studies report). *Šport*, 2010, vol. 58, iss. 3/4, pp. 40-45.
- FONDA, Borut, ŠARABON, Nejc, GREENWOOD, Andrew Peter. Changes in ground reaction force as a result of different technical requirements regarding vertical jumps: study on ballet dancers. *Šport*, 2011, vol. 59, iss. 1/2, pp. 151-155.

Review articles

- FONDA, Borut, ŠARABON, Nejc. Characteristics of uphill cycling: literature review. *Kinesiology*, vol. 44, iss. 1, pp. 5-17.
- FONDA, Borut, ŠARABON, Nejc. Biomechanics of cycling : literature review. *Sport sci. rev.*, 2010, vol. 19, iss. 1/2, pp. 187-210.

Professional articles

- FONDA, Borut, ŠARABON, Nejc. Adjusting parts of the bike with the purpose of the effective and comfortable cycling. *Kond. trening*, 2010, vol. 8, iss. 1, str. 12-18.
- FONDA, Borut, ŠARABON, Nejc. Most common overuse injuries in cycling and its prevention: an overview. *Kond. trening*, 2011, vol. 9, iss. 1, str. 40-46.

Conferences

- FONDA, Borut, ŠARABON, Nejc. Reduced low back pain and improved performance during uphill cycling with adjusted seat position: a case study report. In: MIKALAČKI, Milena (ur.), BALA, Gustav (ur.). *Exercise and quality of life : proceedings book*. Novi Sad: Faculty of Sport and Physical Education, 2011, pp. 387-392.

- FONDA, Borut, PANJAN, Andrej, ŠARABON, Nejc. Reaction time, range and velocity of the reverse handpunch in elite karate athletes. In: MILANOVIĆ, Dragan (ur.), SPORIŠ, Goran (ur.). 6th International Scientific Conference on Kinesiology, Zagreb, Croatia, September 08-11, 2011. Integrative power of kinesiology : proceedings book. Zagreb: Faculty of Kinesiology, University of Zagreb, 2011, pp. 510-513.
- FONDA, Borut, LAWRENCE, Ryan, ŠARABON, Nejc. Changes in vertical jump characteristics as a result of different movement requirements in ballet dancers. In: SOLOMON, Ruth L. (ur.), SOLOMON, John (ur.). 20th Annual meeting of the International association for dance medicine & science, Birmingham, UK, 28th-31st October 2010. Abstracts. Oregon: International Association for Dance Medicine & Science, 2010, pp. 65.
- FONDA, Borut, PANJAN, Andrej, ŠARABON, Nejc. Proprioception and balance profile of classical ballet and comparison to athletes in different sports. In: SOLOMON, Ruth L. (ur.), SOLOMON, John (ur.). 20th Annual meeting of the International association for dance medicine & science, Birmingham, UK, 28th-31st October 2010. Abstracts. Oregon: International Association for Dance Medicine & Science, 2010, pp. 99-100.
- FONDA, Borut, ŠARABON, Nejc. Muscle activity during steep uphill cycling with and without bike geometry optimization. In: KORKUSUZ, Feza (ur.), ERTAN, Hayri (ur.), TSOLAKIDIS, Elias (ur.). [Sport science: where the cultures meet] : book of abstracts. [Köln]: European College of Sport Science, 2010, pp. 286.
- FONDA, Borut, ROŠKER, Jernej, ŠARABON, Nejc. Sensitivity of body sway parameters during quiet standing to manipulation of support surface size and shape. In: KORKUSUZ, Feza (ur.), ERTAN, Hayri (ur.), TSOLAKIDIS, Elias (ur.). [Sport science: where the cultures meet] : book of abstracts. [Köln]: European College of Sport Science, 2010, pp. 448.

Patents

- FONDA, Borut, ŠARABON, Nejc. Seat post for synchronic changing of longitudinal position and inclination of a bicycle seat. patent no. SI 22968 (A), 2010-08-31. Ljubljana: The Slovenian Intellectual Property Office, 2010. 164.
- ŠARABON, Nejc, FONDA, Borut, PANJAN, Andrej. Measurement device for active angle tracking in the knee joint. patent no. SI 23134 (A). Ljubljana: The Slovenian Intellectual Property Office, 2011. 6.

