

1. Record Nr.	UNINA9910255015703321
Titolo	Sports Science Research and Technology Support : Third International Congress, icSPORTS 2015, Lisbon, Portugal, November 15-17, 2015, Revised Selected Papers // edited by Jan Cabri, Pedro Pezarat Correia
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-52770-3
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (X, 143 p. 104 illus.)
Collana	Communications in Computer and Information Science, , 1865-0937 ; ; 632
Disciplina	613.71
Soggetti	Medical informatics Image processing - Digital techniques Computer vision Computer networks Sports medicine Health Informatics Computer Imaging, Vision, Pattern Recognition and Graphics Computer Communication Networks Sports Medicine
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Invited Paper -- How Sports Can Create New Knowledge at a Technical University that Claim not Doing Research in Sport Science? -- Abstract -- 1 Introduction -- 1.1 Sports? -- 1.2 Methodology -- 1.3 The Structure of the Paper -- 2 Sports Technology at Chalmers University of Technology -- 2.1 Why? Who? -- 2.2 What? -- 2.2.1 Workshops -- 2.2.2 Education -- 2.2.3 Dual Careers -- 2.2.4 Research Projects -- 2.2.5 Outreach Activities -- 2.3 Resulting Competitive Advantages -- 3 Examples of Results -- 3.1 Detection of Damage in Equine Hoofs -- 3.2 Injury Prevention -- 3.3 Real Time Motion Sensor for Swimming -- 3.4 Horse ECG -- 3.5 Heel and Trim of an Olympic Sailing Yacht -- 3.6 A Paper Boat -- 4 Starting in Three Sports and Moving on into Five Technology Platforms -- 5 The

Unexpected -- 6 Concluding Remarks -- Acknowledgements --
References -- Papers -- Gait Asymmetry During a 5-Km Time Trial in
Elite Runners: A Descriptive Study -- Abstract -- 1 Introduction -- 2
Methods -- 2.1 Subjects -- 2.2 Procedure -- 2.3 Data Collection -- 2.4
Data Analysis -- 2.5 Statistical Analysis -- 3 Results -- 4 Discussion --
5 Conclusions -- Acknowledgement -- References -- Aerodynamical
Resistance in Cycling on a Single Rider and on Two Drafting Riders: CFD
Simulations, Validation and Comparison with Wind Tunnel Tests --
Abstract -- 1 Introduction -- 2 Experimental Setup -- 2.1 Mannequin
Model -- 2.2 Cyclist -- 3 Numerical Setup -- 3.1 Computational
Domain and Geometry -- 3.2 Mesh and Grid Sensitivity -- 3.3
Boundary Conditions -- 3.4 Solver Settings and Turbulence Modelling
-- 4 Validation Process (Results and Discussion) -- 4.1 Mannequin
Models -- 4.2 Cyclist -- 5 CFD Simulations on Two Drafting Cyclists --
5.1 Description Setup -- 5.2 Results -- 6 Conclusion -- References.
Application of a Parallel Chain Platform to Provide Catching Practice in
Cricket -- 1 Introduction -- 2 Current Catching Practice Methods -- 3
Design, Geometry and Inverse Kinematic Analysis of the Platform -- 3.1
Design -- 3.2 Inverse Kinematics of the Platform -- 4 Algorithm to
Calculate the Velocity and Angle of Launch for the Ball -- 4.1
Terminology and Symbols -- 4.2 Computation of Ball Velocity and
Angle of Launch for High Catches -- 4.3 Computation of Ball Velocity
and Angle of Launch for Flat Catches -- 4.4 Computation of Ball
Velocity and Angle of Launch for Reaction Catches -- 5 Velocity and
Angle of Launch of the Ball Shot from Ball Shooting Machine -- 6
Orientation of the Platform -- 7 Simulation Results -- 8 Conclusion and
Further Work -- References -- Design Optimization of the Landing
Slope of a Ski Jumping Hill -- Abstract -- 1 Introduction -- 2 Flight
Simulation -- 3 Objective Functions -- 3.1 Construction Cost -- 3.2
Safety Landing -- 3.3 Flight Distance -- 3.4 Standard Deviation in the
Flight Distance Due to the Jumper's Skill Difference -- 4 Design
Variables -- 5 Constraints -- 6 Optimization -- 7 Results and
Discussions -- 8 Concluding Remarks -- Acknowledgements --
References -- Computer Supported Analysis of Thermal Comfort for
Cycling Sport -- Abstract -- 1 Introduction -- 2 Materials and Methods
-- 2.1 Research Design -- 2.2 Material -- 2.3 Methods -- 3 Results
and Discussion -- 3.1 Analysis of the Venues for Cycling Sports in Rio
de Janeiro 2016 Olympic Games -- 3.2 Analysis of Meteorological
Conditions in Rio de Janeiro in August -- 3.3 Analysis of Thermal
Comfort in Rio de Janeiro in August for the Athletes of Cycling Sports
-- 4 Conclusions -- References.
Met-Ocean and Heeling Analysis During the Violent 21/22 October
2014 Storm Faced by the Sailboat ECO40 in the Gulf of Lion:
Comparison Between Measured and Numerical Wind Data -- 1
Introduction and Aim of the Research -- 2 The ECO40's Route During
the Gulf of Lion Event -- 3 Weather Analysis of the Gulf of Lion Storm
-- 4 Description of the GPS Measurement System -- 4.1 GPS Data
Processing for the Heeling Analysis -- 5 Wind Data Analysis -- 5.1
Aims of the Analysis -- 5.2 Position of the Anemometer -- 5.3 Wind
Measurements Analysis -- 5.4 Comparison of Wind Measurements with
Numerical Models Data -- 6 Wave Data Analysis -- 7 Concluding
Remarks and Ongoing Research -- References -- Tactical Skills
Training in Team Sports: Technological Supports for the 4P Strategy --
Abstract -- 1 Introduction -- 2 Tactical Skills in Team Sports: Advances
from the NDM Perspective -- 2.1 Tactical Skills and Intuitive Decision-
Making: The RPD Model -- 2.2 Tactical Skills and Coordinated
Decision-Making: The TSA Model -- 3 Enhancing Intuitive and
Coordinated Decision-Making: The 4P Strategy -- 3.1 Positioning the

Training Device -- 3.2 Practicing SSPG -- 3.3 Picturing the Expected Configuration of Play -- 3.4 Post-analysing the Game -- 4 Technology Supports Within the 4P Strategy -- 4.1 The Potential of Technological Supports for Training Tactical Skills -- 4.2 Effect of Video Feedback on Intuitive Decision-Making -- 4.3 Video Feedbacks Vs Ideas Debate for Enhancing Coordination in Team? -- 5 Conclusions -- Acknowledgements -- References -- A Novel Approach to the Automatic Analysis of Tactics and Actions in Team Sports -- 1 Introduction -- 2 Related Work -- 3 Automatic Analysis of Events -- 3.1 Overview -- 3.2 Knowledge Base and Reasoning Engine -- 4 Results -- 5 Conclusions and Future Work -- References -- Author Index.

Sommario/riassunto

This book contains extended and revised versions of selected papers from the Third International Congress on Sports Science Research and Technology Support, icSPORTS 2015, held in Lisbon, Portugal, in 2015. The 9 thoroughly revised and extended papers presented in this volume were carefully reviewed and selected from originally 93 submissions. The papers cover topics in the following main areas: signal processing and motor behavior; sports medicine and support technology; health, sports performance and support technology; and computer systems in sports. .
