

# 5<sup>th</sup>

INTERNATIONAL CONGRESS

## Mountain, Sport & Health

updating study and research  
from laboratory to field

9-10 December 2013

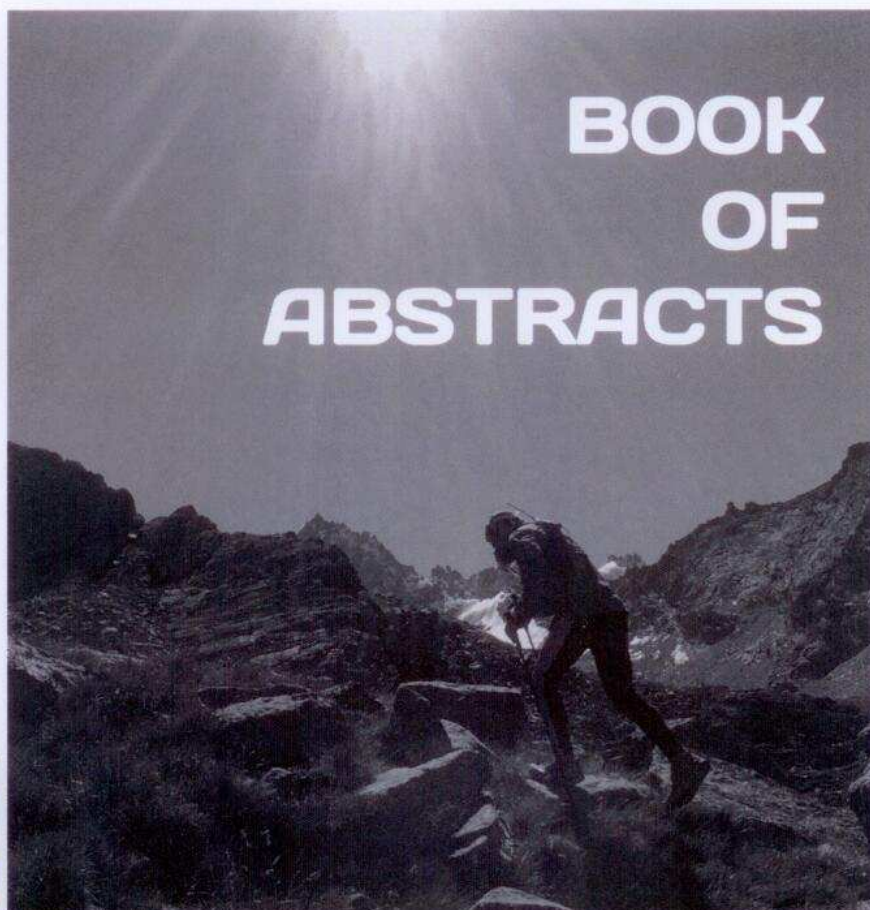
Rovereto (TN) - Italy



Università degli Studi di Verona



COMUNE DI  
ROVERETO



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Co-located with the Winter Universiade Conference 2013



organizers wanted to transmit to the global public, how they constructed the narration about their own culture, and what forms of artistic expression they used to adapt it for international audience.

**AUTHORS:** Yongsheng Sun and Wensheng Wang - Capital University of Physical Education and Sports

**TITLE:** College sports education and cultivation of student's creative abilities

**ABSTRACT:**

This article adopted the method of documentary, interview survey to study college sports and innovation. This article mainly discussed about sports teaching innovation, cultivating innovative talents, rich forms of extracurricular sports activities and cultivating of college students' innovation ability and other issues. Meanwhile, the article puts forward the goal of talents training innovation of physical education teaching, physical education curriculum innovation and teaching practice mode, and provides useful reference helpful for colleges sports teaching.

**AUTHOR:** Vladimir Kolmakov - Siberian Federal University

**TITLE:** Support collaboration to enable high-quality sport sciences education in Siberian Federal University

**ABSTRACT:**

In modern conditions, employers in the field of sports, sports industry and management have high demands for knowledge and professional skills of university graduates. An up-to-date organization and content of the educational process in the preparation of specialists in various fields of sports are presented on the example of the Siberian Federal University. Interdisciplinary educational and research laboratories combining physicians, teachers, ecologists, biologists, engineers, sports and management experts are created in the university for the development and implementation of new courses and evaluation methodologies. The university provides necessary conditions for the emergence of new research teams conducting studies in priority areas for the development of physical culture and student sports. Practical classes for students are often conducted in the laboratories of Natural Sciences departments located on campus and equipped with advanced scientific and educational equipment. This is necessary for learning about innovations applied in the field of sports, such as laser and sensor technology, new materials and computer software. Internet technology and audiovisual aids developed by teachers from other faculties and universities are widely used in the theoretical courses. In addition, improving the quality of sports education is achieved through mutually beneficial cooperation with professional sports clubs (rugby, football, basketball, hockey) located in the city of Krasnoyarsk. Internships and practical training of students in the professional clubs are implemented with the possibility of teacher observations during trainings and competitions. Coaching and administrative staff of clubs are widely engaged to conduct training sessions. For writing projects and dissertations there is a free student access to the archives and statistical materials of local governmental agencies responsible for the development of physical culture and sports in the Siberian region. In general, the university has set itself the task of integration of education, science and sports practices which includes bringing the results of scientific activity to practical use. It is concluded that large multidisciplinary universities provide significantly more opportunities and prospects for the implementation of innovations in the study curriculum for training of specialists in various fields of sports. Due to the qualitative leap in the field of sports education and infrastructure in the Siberian Federal University Krasnoyarsk city received the status of a candidate for the right to host the XXIX World Winter Universiade in 2019.

**Session: Sport and Research: the Universiade projects at the University of Trento (MIR2)**

**AUTHORS:** Martina Cappelletti, Giovanna Ferrentino, Isabella Endrizzi, Eugenio Aprea, Emanuela Betta, Marialaura Corollaro, Flavia Gasperi and Sara Spilimbergo

**TITLE:** Supercritical carbon dioxide pasteurization of coconut water, a sport drink with a high vitaminic and nutritional content

**ABSTRACT:**

The hydration and absorption of liquids with a high content of mineral salts, vitamins, sugars and nutritional substances are fundamental for the correct feed of all sportive people. Decades of scientific research clearly demonstrated the benefits derived from the assumption of drinks during and after a physical activity.

Sport drinks are usually processed by thermal pasteurization that destroys the natural microbial flora occurred in the product and prologue the shelf life for 2/3 months. However, it is well known that the high process temperatures compromise the sensorial attributes and induce several alterations of the product nutritional contents. The use of supercritical carbon dioxide seems to constitute one of the most promising innovative technologies for food applications avoiding the adverse effect of thermal treatments. Since the 1980s supercritical carbon dioxide has been increasingly investigated as a technique able to induce pasteurization/sterilization of the natural microbial flora but also pathogens occurring in solid and liquid matrixes. Carbon dioxide used in this process is relatively inert, inexpensive, nontoxic, nonflammable, recyclable and readily available in high purity leaving no residues when removed after the process.



Furthermore, it is considered a GRAS (Generally Recognized as Safe) substance, which means it can be used for food products. In this context, the present project aimed to investigate the possibility to apply supercritical carbon dioxide for the pasteurization of coconut water in order to guarantee its microbial stability and preserve the sensorial and quality attributes. Coconut water is becoming more and more popular within the athletes as "energy and healthy drink" rich in vitamin C, magnesium, calcium, potassium, vitamin B, arginine, alanine, lysine, glutamic acid, enzymes with anti-inflammatory properties, minerals and antioxidants. A multi-batch apparatus has been used to test supercritical carbon dioxide feasibility to inactivate the natural microbial flora (mesophilic microorganisms, lactic acid bacteria, total coliforms, yeasts and moulds) of coconut water as a function of pressure (80 and 120 bar), temperature (22, 30, 35, 40 and 45°C) and time (from 5 to 60 minutes). The study indicated that 120 bar, 40°C, 30 min were the optimal process conditions for the pasteurization of coconut water. After the treatment about 5 Log reductions of mesophilic microorganisms, lactic acid bacteria, and yeasts and molds were achieved while total coliforms decreased of about 7 Log. A deep chemical/physical characterisation (colour, pH, soluble solids, total acidity, mineral salts, sugars, vitamins, antioxidants, volatile compounds) was also performed to investigate the impact of supercritical carbon dioxide pasteurisation treatment on the quality traits of fresh coconut water. To complete the study, a thermally pasteurized (90°C for 1 minute) coconut water was also considered in order to compare the impact of the thermal and non-thermal processes on the quality, sensorial and nutritional attributes.

**AUTHORS:** Chiara Bassetti, Davide Conigliaro, Marco Cristani, Roberta Ferrario, Francesco Setti, Paolo Rota, Nicola Conci and Nicu Sebe

**TITLE:** The OZ Project: Osservare l'attenZione (Observing Attention)

**ABSTRACT:**

We present the OZ (Osservare l'attenZione – Observing attention) project, developed in the scope of the 2013 Trentino Winter Universiade. Understanding whether an event attracted audience's attention and which moments were mostly enjoyable is a primary goal for sport and show business managers.

OZ is an interdisciplinary, mixed-methods project that aims at developing a technology able to automatically detect at run time spectators' attention level, via the integration of microsociological analysis of human behavior into computer vision modeling and techniques, in a typical Social Signal Processing approach.

The presentation focuses on spectator crowd, a typology of crowd whose peculiarity is that people stay mostly near a fixed location -their seat- and have a strong relation with the event they are watching, that becomes a reference point, where the crowd's attention is focused, and around which the space is structured.

In particular, we present an analysis of spectator crowd that can be performed using the following applications:

- Spectators segmentation: finding diverse groups among spectators (e.g., fans of the opposite teams; attentive VS distracted, enthusiastic VS annoyed spectators).
- Excitement calculation: in a given time interval, quantizing the level of excitement of the crowd or some of its parts.
- Event segmentation: segmenting diverse crowd activities (clapping hands, heckling, etc.), and studying how these are related with the event (people clap hands when the favorite team scores a goal, get excited when the referee signal or not a foul).

To test our framework, we have built a novel repository of videos taken during the 2013 IIHF Ice Hockey U18 World Championship. We present the results of this study, whose successfulness allows to apply the approach to some hockey matches of the Universiade, for automatically singling out matches and parts of them that have ingenerated the greatest levels of attention and excitement.

**AUTHORS:** Lucia Savadori, Nicolao Bonini, Luciano Andreozzi, Stefania Pighin, Barbara Pellegrini, Federico Schena

**TITLE:** Risky Decisions in Winter Mountain Sports

**ABSTRACT:**

Systematic analysis of accidents involving practitioners of winter sports identified erroneous judgments and poor decisions as the primary causal factors of such accidents (Atkins, 1994; Logan and Atkins, 1996, McCammon, 2000). Building on the assumptions of the transient hypofrontality hypothesis (Dietrich, 2003), the present research aimed to identify potential temporary changes in sportsmen's decision making processes and risk taking during physical exercise in adverse environmental conditions which simulate those that are generally experienced during winter sports practice (i.e., cold temperature and mild hypoxia). We investigated sportsmen's tendency to avoid risk to secure a certain gain but to seek risk to avoid a certain loss, namely, the "reflection effect" (Kahneman & Frederick, 2007; Kahneman & Tversky, 1979), and behavioral risk propensity (Lejuez, Read, Kahler, Richards, Ramsey, et al., 2002). Twenty sportsmen (18-35 years old) were asked to undergo subsequent experimental sessions designed to compare their judgments and their risk attitudes during exercise