

CISM Courses and Lectures No. 473

**BIOMECHANICS
AND SPORTS**

edited by PAOLO B. PASCOLO

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XXI Winter Universiads 2003

instead of

XI Winter Universiads 2003

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INTERNATIONAL CENTRE FOR MECHANICAL SCIENCES

COURSES AND LECTURES - No. 473



BIOMECHANICS AND SPORTS

PROCEEDINGS OF THE
XI Winter Universiads 2003

EDITED BY

PAOLO B. PASCOLO
UNIVERSITÀ DI UDINE



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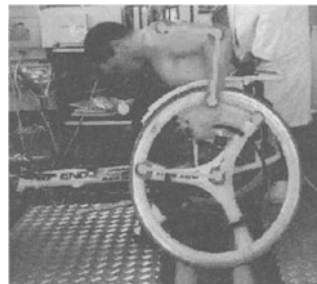
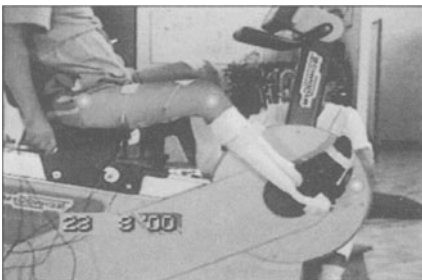
PREFACE

On XII Winter Universiads 2003, CISM offered its scientific contribution by hosting a conference on mechanics applied to sports and, in general, to human movement.

A systematic debate on few specialized topics was out of the scope of the meeting; rather, the conference was conceived as a chance to overview experiences gained from several operators working on different aspects of biomechanics. Furthermore, not aiming at a comprehensive cover of such a complex argument, only some topics have been dealt with during the conference.

In this way the reader will face in these proceedings bioengineering aspects, control issues, techniques for the optimization of human performances as well as methods for the improvement of athletic equipments and devices. Biomechanical data and signal processing, biomaterials and robotics complete the proposed framework.

Further works were included in the poster session of the conference and are not presented here. We just mention an innovative use of a multibody code (Adams by MscSoftware) for the improvement of the design of ski-boots and some investigations on paraplegic subjects regarding electro-stimulated pedalling and optimisation of the wheel-chair propulsion.



Some works were consistent with the fact that 2003 was designated as European Year of Disabled People. Indeed, many innovations in sport and biomechanics could suggest interesting rehabilitative applications and a better prevention of some pathologies due to the exercise of some normal activities like professional cycling.

We hope that, even in the future, sport events like Universiads could be associated to scientific initiatives like the one presented here.

Paolo B. Pascolo

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