



**3DAHM 2024** Montevideo URUGUAY 3-6 December 2024  
**3DAHM 2024 Oral Sessions Program**  
 18<sup>th</sup> International Symposium on 3D Analysis of Human Movement  
 in Uruguay, Latin America, December 2024  
 Program chair: Natalia Garay Badenian

**Tuesday, Dec 3**

|       |                        |  |   |
|-------|------------------------|--|---|
| 13:00 | Alberto Minetti        | <i>Back to the Moon: accumulated knowledge and new perspectives in adapted human locomotion</i>  | Presented by: Raphael Dumas                                     |
| 14:00 |                        | Break  |   |
| 14:15 | Claudio Belvedere      | "3D flatfoot characterization in weight-bearing condition before and after correction surgery"   | CLINICAL BIOMECHANICS<br>Chairs: Paola Cardenas & Raphael Dumas |
| 14:30 | Carlos Cruz-Montecinos | Increased Intermuscular Coherence During Gait Reflects Neural Adaptations in Non-Neurological Knee Flexion Contracture                     |   |
| 14:45 | Bela Agarwal           | "Instance of peak knee flexion and adduction moment during deep-squat"   |   |
| 15:00 | Shishir Shah           | Development of a Powered Transtibial Prosthesis  |   |
| 15:15 | Marco Lagones          | Design and Validation of a Prosthetic Foot Adaptable to Sagittal Plane Ground Irregularity   |   |
| 15:30 | Gonzalo Giannechini    | Does Diabetes Mellitus type II affect the mechanics of walking? Biomechanics of Tango walking  |   |
| 15:45 | Ayaka Hobo             | Non-invasive evaluation of plantar fascia strain during locomotion considering its insertion site by motion capture-ultrasound combination |   |

**Wednesday, Dec 4**

|       |                      |   |   |
|-------|----------------------|---|---|
| 9:00  | Rajani Mullerpatan   | <i>Movement for Health: Human Movement Science in Health &amp; Wellness</i>   | Presented by: Georgios Stylianides  |
| 10:00 | Carol Torres         | Biomechanics of Tango walking   | LOCOMOTION GENERAL & CLINICAL GAITS I<br>Chairs: Mauro Callejas Cuervo & Georgios Stylianides |
| 10:15 | Inae de Oliveira     | Joint stiffness during jump landing tasks with or without a condition of muscle soreness                                |   |
| 10:30 | Gaspere Pavei        | Hypogravity-driven kinematic and dynamic changes in bouncing gaits  |   |
| 10:45 | Aline Dalfito Gava   | Plexus brachial traumatic injuries affect spatiotemporal gait parameters  |   |
| 11:00 |                      | Break   |   |
| 11:15 | Gustavo Grinspan     | Rectus Femoris Shear Elasticity Varies with Flexio-Extension of Hip and Knee During Gait                                | LOCOMOTION GENERAL & CLINICAL GAITS II<br>Chairs: Chris Baten & Claudio Belvedere             |
| 11:30 | Raphael Mesquita     | Upper and lower limb coordination in running at different step frequencies  |   |
| 11:45 | Natsuki Sado         | "Asymmetric kinematic responses to verbal gait instructions: stooped posture induces shorter steps, but not vice versa" |   |
| 12:00 | O+P Digital Designer | COMMERCIAL INTERVAL   |   |





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### Wednesday, Dec 4

|       |                                     |  |  |
|-------|-------------------------------------|--|--|
| 12:15 | Heron Baptista de Oliveira Medeiros | "The Effect of Elastic Band Positioning on Hip Torques and Electromyographic Activity During Side-Stepping Exercise"   | <b>LOCOMOTION<br/>GENERAL &amp; CLINICAL<br/>GAITS II</b><br>Chairs: Chris Baten & Claudio Belvedere       |
| 12:30 | Luis Alberto Parada                 | Parameters and mechanical description of lateral walking   |  |
| 12:45 | Claudio Belvedere                   | Knee osteotomy alone and combined with meniscal allograft transplantation: a clinical trial merging clinical, biological and biomechanical evaluations                   |  |
| 14:00 | Walter Herzog                       | <i>3D reaction force-sharing of synergistic muscles during walking &amp; running</i>   | Presented by: Mariana Rampinelli   |
| 15:00 | Vinish Yogesh                       | "Comprehensive Study of UWB Distance Estimation Errors in LOS and NLOS Caused by the Human Body in 3D-AHM Scenario"  | <b>BIOMEDICAL<br/>ENGINEERING &amp;<br/>WIRELESS SENSORS</b><br>Chairs: Ariel Braidot & Mariana Rampinelli |
| 15:15 | Mauro Callejas Cuervo               | "Active Video Game Using an Inertial-Magnetic System for Kinematic Analysis in Older Adults"   |  |
| 15:30 | Vinish Yogesh                       | "Position Estimation with a Swarm of Integrated UWB/MIMU Sensors within the Context of 3D Analysis of Human Movement"  |  |
| 15:45 | Paolo Brasiliano                    | "Gait smoothness estimation during walking: indexes and walking speed influences"  |  |
| 16:00 | Gold Sponsors                       | Industry Session   |  |
| 16:30 |                                     | Break  |  |
| 17:00 | Beatrice De Lazzari                 | "Smartphone-based Classifier for ACL Injury Risk Assessment Using Vertical Drop Jump Tasks and the Landing Error Scoring System"   | <b>AI – MODELLING</b><br>Chairs: Valentina Camomilla & Bruno Watier  |
| 17:15 | Diego Vicente Contreras             | "Automatic Counting of Dynamic Technical Actions Using Computer Vision in the Biomechanical Risk Assessment of Work-Related Musculoskeletal Disorders of the Upper Limb" |  |
| 17:30 | Zoé Pomarat                         | "Estimation of ground reaction forces in rugby scrummaging using instrumented insoles and machine learning"  |  |
| 17:45 | Néstor Duque                        | Machine learning en el análisis de la velocidad de la marcha en personas de la tercera edad  |  |

### Thursday, Dec 5

|       |               |   |  |
|-------|---------------|---|--|
| 9:00  | Marcus Pandy  | <i>Muscle &amp; Joint Function in Human Gait</i>  | Presented by: Felipe Carpes                                  |
| 10:00 | Rosario Ulloa | "Data Standardization for Gait Analysis in the Oritel Network."   | <b>METHODOLOGY</b><br>Chairs: Felipe Carpes & Leonardo Lagos |
| 10:15 | Ariane Lallès | Dynamic criterion to quantify instability during locomotion   |  |
| 10:30 | Chris Baten   | "Pointer-based segment calibration facilitates sensor-based gait analysis for more patients"                              |  |
| 10:45 | Raphael Dumas | "Is it possible to use confidence information to drive a multibody kinematics optimization in markerless motion capture?" |  |
| 11:00 |               | Break   |  |
| 15:30 | Magalí Sganga | "Comparative methodological approaches for analyzing margin of stability during walking"                                  | <b>BALANCE &amp; POSTURE</b><br>Chairs: Georgios Stylianides |





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### Thursday, Dec 5

|       |                                 |   |   |
|-------|---------------------------------|---|---|
| 15:45 | Pablo Eduardo Caicedo Rodríguez | The foot impact in human gait. A definition.  | BALANCE & POSTURE<br>Chairs: Georgios Stylianides               |
| 16:00 | Giorgio Poletto                 | "Effect of weightlifting shoes on stability during barbell squat in high intensity cross training athletes"                               |   |
| 16:15 | Manami Fujii                    | "Repeatability of a three-dimensional pseudorandom balance perturbation assessment"   |   |
| 16:30 |                                 | Break   |   |
| 17:00 | Rajani Mullerpatan              | "Lower extremity joint Kinematics of Cross-legged sitting posture: A preliminary study report"  | ERGONOMICS<br>Chairs: Annamária Várkonyi-Kóczy & Paola Cardenas |
| 17:15 | Sneha Kirve                     | "Influence of Spring Loaded Passive Exoskeleton on Erector Spinae Muscle Activity in Mathadi Workers with and without Low Back Pain"      |   |
| 17:30 | Maria Cristina Herrera Valerio  | "Estimating overhead postures with Accelerometer Data in skilled trade workers: model validation considerations for in-field application" |   |
| 17:45 | Lessby Gómez-Salazar            | "Opencap y Opensim para el análisis cinemático 3D de tareas de manipulación de cargas realizadas en la construcción"                      |   |

### Friday, Dec 6

|       |   |   |  |
|-------|---|---|--|
| 9:00  | Yumna Albertus                          | <i>Innovative Biomech Research and Technology Development from Africa: Advancing Clinical and Athletic Applications</i> | Presented by: Heiliane Fotnana                                       |
| 10:00 | Arthur Dewolf                           | The bouncing mechanism of running in the wind   | SPORTS<br>BIOMECHANICS I<br>Chairs: Rodrigo Zacca & Heiliane Fontana |
| 10:15 | Mario Nunez-Lisboa                      | "Impact of physical activity levels on age-related gait characteristics young and older adults"                         |  |
| 10:30 | Pablo Fabian Moscoso Fernandez-Salvador | "Development of a System based Force Load Cells for Measuring Vertical Jump Parameters"                                 |  |
| 10:45 |   | Break   |  |
| 11:00 | Heron Baptista de Oliveira Medeiros     | "Influence of the Shoulder Multiplanar Position on Shoulder Rotation Torque"  | SPORTS<br>BIOMECHANICS II<br>Chairs: Gustavo Grinspan                |
| 11:15 | Bernardo Artcardi                       | "Knee joint position reproduction and isometric strength measurements in healthy subjects using IMU"                    |  |
| 11:30 | Magali Sganga                           | "The immediate effects of three different ankle taping on static postural stability in healthy amateur athletes"        |  |
| 11:45 | Laura Camila Mayorga Lozada             | "Time-frequency analysis of sEMG signals to assess knee function during drop jump performance"                          |  |

3DAHM is a Technical Group of the ISB International Society of Biomechanics

[www.3dahm2024.com](http://www.3dahm2024.com)

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