



# 3DAHM 2024 Montevideo URUGUAY 3-6 December 2024

## 3DAHM 2024 Poster Session B – Thursday Dec. 5, 11:15

18<sup>th</sup> International Symposium on 3D Analysis of Human Movement

in Uruguay, Latin America, December 2024

Program chair: Natalia Garay Badenian

### AI – MODELLING, METHODOLOGY, BALANCE & POSTURE, ERGONOMICS, SPORTS BIOMECHANICS

5	Konstantinos Vrongistinos, Taeyou Jung & Young Hwang	Accuracy of Calculating Three-Dimensional Angular Velocities from Linear Velocities
17	Inaê de Oliveira, Karine Stoelben, Eduarda Tulus, Vitória Ferreira, Luiza Rossdeutscher & Felipe Carpes	Prediction of knee 3D kinematics and kinetics in bilateral drop landing by using physiotherapy clinical tests
18	Inaê de Oliveira, Victor Cossich, Conrado Laett, Andressa Lemos, Luiza Rossdeutscher, Bruno Panciera & Felipe Carpes	3D markerless applications in jump landing biomechanics assessments
20	Felipe Carpes, Inaê de Oliveira & André de Andrade	The use of probability of agreement to quantify asymmetries in jump landing
27	Ariel Andres Antonio Braidot, Elisa Pérez, Héctor Alejandro Rodrigo Yanadel & Natalia Martina López	Study of coordination patterns in repeated upper limb movements
19	Jaime Arista Cutipa, Adrián Hernández Vega, Jesús Juárez Mendoza, Jhon Vásquez González, Mateo Bedoya Torres, Angélica Valencia Perea, Victoria Abarca & Isabel Soto Cardona	Comparative Movement Analysis During the Making of a Rugby Ball Pass Between Peruvian and Colombian Sportsmen Using Videogrammetry
26	Eder Peña Quimbaya, Néstor Darío Duque-Méndez, Luis Felipe Garcia Arias, Aldemir Vargas Eudor & Camilo Castillo Benavides	DISPOSITO ELECTRÓNICO PARA EVALUACIÓN DE ALCANCE FUNCIONAL EN PERSONA MAYOR
46	Manami Fujii, Sophia Chirumbole, Andrew Wagner, Jaelyn Cacesse, Ajit Chaudhari & Daniel Merfeld	Impact of vestibular coordinate tilts on postural sway during a three-dimensional pseudorandom balance perturbation assessment
49	Leonardo Ariel Mensi Malerba, Magalí Sganga & Franco Ezequiel Liotino	Force, power, speed and mechanical effectiveness profile during sprint in amateur football players
53	Mariano Miguel Perdomo, Ariel Andrés Antonio Braidot, Gabriel Villaverde, Luis Alberto Clementi, Lucas Pianigiani, Jean Pierre Arotcharen, Bruno Zorzet & Josefina Giorgi Insaurralde	An Innovative Methodology for Taekwondo Kick Diagnosis Using Recurrent Neural Networks
54	Ariel Andrés Antonio Braidot, Joaquín Monti, Marco López Ibarra, Guillermina Sáenz & Alejandro Hadad	Characterization of Human Weight Distribution in Baropodometry
31	Imma Ceriello, Riccardo Borzuola, Andrea Macaluso & Valentina Camomilla	Impact of Hip Joint Centre Estimation on Lower Limb Kinematics During Functional Reach: A Comparison of CGM2 and PiG Models
64	Ana Carolina Morais, Gabriel del Rosso, Bruno Panciera, Carlos Sendra-Pérez, Inaê de Oliveira, Eduarda Tulus & Felipe Carpes	Exercise intensity and knee mechanics during squat exercises: pilot study
71	Mariana Alonso Etchemendy & Fernando Diefenthaler	Torque-angle relationship of the shoulder joint in female pole dancers: Preliminary study
78	Gabriel Palermo Del Rosso Barbosa, Karine Jv Stoelben & Felipe P Carpes	Intra-limb agreement between impact forces and joint angular velocity in drop landings
80	Artur Bonezi, Manuel Urteaga & Renata Bona	Kinematic variability of Parkour's kong jump
83	Maria J. Rojas-Caballero, Rosy P. Cárdenas-Sandoval, Cristian Vanegas, Nicolas Orjuela, Juliana Bravo, Manuel Gomez & Estiben Sua	Análisis Biomecánico del gesto de baile en universitarios: enfoque de prevención de lesiones para los bailarines de salsa de la Universidad del Rosario
84	Rosy P. Cárdenas-Sandoval, Sebastian Jaramillo-Isaza, Miguel A. Cifuentes-Santamaria, Camila A. Rivera-Blanco, Juan Daniel Pisso-Durango, Juan José Alemán, Camilo A. Tenjo, Samuel D. Acosta, Daniela Cárdenas, Blanca J. Girón, Danny Al. Ortega Contreras, Santiago Pulido López, Yidsy N. Rojas Latorre & Estiben A. Sua	Machine learning prediction of musculoskeletal injury risk in female student-athletes
85	Monica J. Vargas-Rodríguez, Rosy P. Cárdenas-Sandoval & Mateo Bustos-Díaz	Análisis biomecánico del suelo pélvico en en ciclistas de ruta femeninas
88	Linnette Jara, Darío Santos & Franco Simini	Evaluation of the Six-Minute Walk Test: a Literature Review
2	Mario Burgos, Tamara Urra & Leonardo Lagos	Optimizing Running Mechanics in Professional Women's Soccer: A Spatiotemporal Analysis with Auditory Feedback Training





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3	Salvador Melgoza Villanueva, Marc Anthony Pena, Natali Olaya Mira, Citlalli Jessica Trujillo Romero & Carolina Vitoria Barragan	Biomechanical gait parameters as an evaluation tool for prosthetic fitting
8	Natali Olaya Mira, Isabel C. Soto Cardona, Gustavo A. Bacca Insuasty, Adriana C. Guerrero Peña & Jubelly A. Amariles	Prospective study into the influence of foot type in asymptomatic young adults using baropodometry
11	Balázs Tusor, Annamária R. Várkonyi-Kóczy & Stefan Gubo	Indexed Fuzzy Inference-based Activity Recognition
14	Valentina Silva-Pereyra, Gabriel Fábrica & Carlo M. Biancardi	Different methods to get heights and powers of vertical jump, which one should be chosen?
43	Wilber Rosales, Ailín Tibado, Marcos José Crespo & Emiliano Pablo Ravera	Effect of Musculoskeletal Models on Gait Analysis Outcomes in Children with Cerebral Palsy Undergoing Femoral Derotation Osteotomy
50	Juan Agustín Beret, Leandro Bugnon & Emiliano Pablo Ravera	Assessment of a Probabilistic Musculoskeletal Algorithm for Estimating Gait Kinetics Without Ground Reaction Force Data
59	Luis Ricardo Soria, Jorge Alberto Herrera, Carlos Rodolfo Arcuri, Fernando Daniel Brizuela del Moral, Mauricio Borda & Martín Edgardo Cejas	Uso del software educativo Kinovea para el aprendizaje de Biomecánica Deportiva
75	Emiliano Ravera	Subject-specific pediatric musculoskeletal model based on machine learning
87	Natalia Garay Badenian, Alejandra Rial & Franco Simini	Review of quantitative movement analysis in epilepsy seizures
106	Carlos de la Fuente Cancino, Rony Silvestre, Roberto Yañez, Matias Roby & Alejandro Neira	Enhanced Pivot-shift grading from isoinertial Gerdy's acceleration resultant using Multiclass SVM.
107	Carlos de la Fuente Cancino & Felipe P Carpes	Achilles tendon rupture mechanism determination from real athletic competition by kinematic 2D Video Analysis: loss of Knee-ankle coordination.
108	Carlos de la Fuente Cancino, Ireneu Loturco & Felipe P Carpes	Unexpected Achilles tendon rupture in an Olympic sprinter based on 2D Video analysis: The uncon-trolled dorsiflexion.
109	Carlos de la Fuente Cancino, Rony Silvestre, Roberto Yañez & Felipe P Carpes	Fluctuations of quadriceps force training in severe persistent quadriceps weakness after failed 9 month of physiotherapy in Anterior Cruciate Ligament re-construction.
110	Carlos de la Fuente Cancino, Alejandro Weinstein, Rodrigo Guzman-Venegas & Felipe P Carpes	PCA- Kmeans regional chest movement recognition during tidal breathing in healthies through wearable sensors.
112	Alrjandro Neira, Rony Silvestre, Luis Peñailillo Peñailillo & Carlos de la Fuente Cancino	Kinematic assessments immediately after competitive soccer matches suggests increased rotatory laxity of the knee.
117	Steven Hirsch, Joshua Shapiro, Jacob Rauch & Giuseppe Barbalinardo	Leveraging Machine Learning to Improve Repetitions in Reserve Estimates During Resistance Training
118	Salvador Melgoza Villanueva & Natali Olaya Mira	Biomechanical and Temperature Assessments in Transfemoral Prosthetic Fitting
119	Hamlet Suarez & Rodrigo Salamano	Gait patterns in unstable older patients with vestibular hypofunction. Preliminary results in assessment with time-frequency analysis.
120	Agustin Pereyra, Sebastián Sosa & Gustavo Bermúdez	2D Protocol to Identify Asymmetries in Dynamic Knee Q Angle in Amateur Football Players During Unilateral Jumps
123	Carlos Cruz, Xavier García-Massó & Claudio Tapia	Ankle Intermuscular Coordination in Active and Sedentary Youths: A Causal Analysis through Empirical Mode Decomposition

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

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

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