

FINAL PROGRAMME

20th Annual Meeting of ESMAC

September 15 -17, 2011
Vienna, Austria



CONTENTS

4	Welcome Message
5	Welcome Words by the Mayor of Vienna, Austria
6	Conference Information
10	General Information on Vienna
14	Official Social Programme
15	Scientific Programme
16	Programme at a Glance
19	Thursday, September 15, 2011
31	Friday, September 16, 2011
46	Saturday, September 17, 2011
52	Index of Authors
60	Exhibition Floor Plan
61	List of Exhibitors
62	Exhibitors
80	Floor Plans University of Vienna

DEAR MEMBERS, COLLEAGUES AND FRIENDS,

a warm welcome to the 20th Annual Meeting of the European Society of Movement Analysis in Adults and Children (ESMAC).

The conference is suitable for those interested in the clinical and technical aspects of movement analysis. This multidisciplinary conference provides a forum for researchers and clinicians involved in clinical gait analysis. Presentations will cover State of the Art developments in movement analysis in adults and children, new methodologies and developing expertise in clinical decision making.

Our pre-conference gait analysis course (12th-14th) and seminar programme (13th-14th) are aimed at new-starters and experienced professionals.

Vienna is located in the eastern part of Austria, close to the Czech Republic, Slovakia, and Hungary. It is by far the largest city in Austria with a population of about 1.7 million within the city and about 2.3 million in the metropolitan area. It is the countries cultural, economic, and political centre. At the same time it is a very safe, clean and green city. In 2005 an Economist Intelligence Unit study of 127 world cities ranked it first equal with Vancouver for the quality of life.

The conference will convene at the impressive main building of the University of Vienna, Austria. The University of Vienna was founded in 1365 and is the oldest university in the German-speaking world and one of the largest in Central Europe. Situated on the Ringstrasse, the main building of the University of Vienna was designed in the style of historicism by architect Heinrich von Ferstel and inaugurated in 1884.

Vienna offers a wide variety of exciting things to experience – from old historic buildings, classic concerts, the Opera and other cultural highlights to modern museums and pop concerts. Walk in the footsteps of the Habsburgs, visit the splendid baroque Schönbrunn Palace or stroll along the magnificent Ring Boulevard and take a look at the Imperial Palace.

Vienna has a long tradition as a major conference site and established an outstanding reputation as conference city. Vienna ranks among the top congress destinations of the world, providing all the infrastructure and professionalism required to successfully organize premium scientific events.

We are certain that this will be a memorable and enjoyable meeting. We look forward to your participation at the ESMAC 2011 in Vienna.



Ing. Dr. Andreas Kranzl
Congress President



Dr. ir. Jaap Harlaar
President ESMAC

WELCOME WORDS BY THE MAYOR OF VIENNA, AUSTRIA

Dear participants,

hardly any other city in the world is as closely associated with medical tradition and progress as Vienna.

Thus, I am very pleased that ESMAC has chosen Vienna for her 20th Annual Meeting. I am convinced that the intensive exchange of experiences with international experts will benefit all who attend.

The interdisciplinary nature of this conference will provide a good basis for knowledge-sharing among the various professional groups, facilitating both scientific exchange and the best clinical care of patients.

As Vienna's mayor, it is of major importance to me to provide our citizens with a dense network of medical care and social security. Yet beyond the daily treatment of patients, we need to foster the fields of research and education - because it is those pillars which significantly impact the quality of our system.

Good luck for the conference, and may you return home with new knowledge and ideas, but also fond memories of Vienna!



Dr. Michael Häupl
Mayor of Vienna

CONFERENCE INFORMATION

Abstract Book

The ESMAC 2011 Abstract Book will be handed out with your registration material.

Certificate of Attendance

Your Certificate of Attendance will be included in your conference material available at the registration desk.

Cloakroom

You can leave small luggage at the registration desk in the main entrance hall.

Conference Language

The official language of the meeting is English. No simultaneous interpretation will be provided.

First Aid

If needed, please contact the staff at the registration desk or dial 112

Important Addresses

Organizer & Scientific Secretariat



Gesellschaft zur Förderung der
klinischen Bewegungsanalyse - GFKB
c/o Orthopädisches Spital Speising,
Labor für Gang und Bewegungsanalyse
Speisinger Straße 109,
1130 Vienna, Austria

Official PCO, Sponsorship & Exhibition Management



Mondial Congress & Events
Mondial GmbH & Co. KG
Operngasse 20b
1040 Vienna, Austria
Tel.: +43 1 58804-0,
Fax: +43 1 58804-185
E-mail: esmac2011@mondial-congress.com
www.esmac2011.com

Insurance and liability

Delegates are advised to arrange health and accident insurance prior to travelling to the congress. The organisers are not responsible for any personal injury, loss, damage, accident to private property or additional expense incurred as a result of delays or changes in air, rail, sea, road or other services, strikes, sickness, weather or any other cause.

Internet Access

Wireless LAN (W-LAN) will be available for free for all participants and exhibitors.

UserID: esmac6

Password: vienna

Furthermore you can use the PCs located in the Seitenaula (ground floor) to access internet.

Lunch and Refreshments

Coffee & tea and lunch will be available in the Exhibition Area during designated coffee break & lunch times and is included in the registration fee.

Name Badges

All participants are kindly requested to wear their name badge at all congress events. The access to the Scientific Programme and social events is restricted to those, who have registered.

The following badge colours are used at the conference

Congress	Blue
Gait Course	Red
Seminar	Clear Blue
Staff	Yellow
Press	Green
Exhibitor	Grey

Payment

Please note that all on-site payments should be made in EURO (€) or by credit (Visa, Master Card and American Express will be accepted). Unfortunately, we cannot accept traveller's cheques, other credit cards, Euro cheques or other currencies.

Posters

Posters will be displayed in the rooms framing the Plenary Hall (Senatssaal).

The size of your poster should be **130 cm (height) x 90 cm (width) in portrait format**. The poster area will be located near the Plenary Hall on the 1st floor of the University of Vienna. You can mount your poster on **Thursday, September 15, 2011 from 08:00, by the latest; we request that posters are mounted by 10:00**. Please remove your poster on Saturday, September 17, 2011 after the coffee break at 11:00 and until 14:00 at the latest; otherwise the congress staff will dispose of it. Material to mount the posters will be available on-site.

Preview Room

The preview room is located on the first floor in the Business Lounge. Please follow the signage. Staff and equipment will be available for you to arrange and preview your PowerPoint presentation.

Presenters are requested to come to the Preview Centre and check-in their presentation (on CD-ROM or USB-removable drive), no later than **3 hours before the start of the session** during which they will give the presentation. If the session starts early in the morning, presenters are kindly asked to check-in their presentation in the afternoon of the preceding day.

Opening hours Preview Room

Wednesday, September 14, 2011	17:00 – 19:00
Thursday, September 15, 2011	08:00 – 18:00
Friday, September 16, 2011	08:00 – 18:00
Saturday, September 17, 2011	08:00 – 11:00

Presentations will be performed using PowerPoint file format on Windows PC (MS Office 2010). Only digital material will be allowed for podium presentations. In the interests of time-keeping, we recommend no more than one slide per minute.

Presentations shall be provided on a CD-ROM or USB-removable drive to the Preview Centre.

Due to time and technical restraints during the sessions, personal laptops shall preferably not be used in the session rooms.

If bringing own laptops is unavoidable presenters are requested to present themselves at the Preview Centre to make sure the connection is secured. A VGA cable will be provided; special plugs and adapters must be provided by the presenter. In case of use of a Mac, presenters must also provide an adapter.

Registration Area

The registration and information desk is located in the lobby of the main university building staffed by the Congress Secretariat. The Mondial Congress & Events team and the conference hostesses will be pleased to help with all inquiries regarding registration, conference material, and the conference programme.

Please do not hesitate to contact the team members if there is anything they can do to make your stay more enjoyable.

Registration and information desk onsite

Monday, 12 September:	08:00 - 18:00
Tuesday, 13 September:	08:00 - 18:00
Wednesday, 14 September:	08:00 - 18:00
Thursday, 15 September:	08:00 - 19:00
Friday, 16 September:	08:00 - 17:30
Saturday, 17 September:	08:00 - 12:00

Participants and accompanying persons are kindly requested to register here.
The conference material, certificates of attendance, congress bags, tickets for social events and booked excursions will be handed out upon registration.

Smoking

Smoking is not permitted inside the university buildings.

Venue

The University of Vienna is located in the city centre. It is only 30 minutes away from Vienna International Airport and the historical heart of the city centre is within 5 minutes walking distance.

Address:

University of Vienna
Dr.-Karl-Lueger-Ring 1
A-1010 Vienna
Austria

GENERAL INFORMATION ON VIENNA

Area: 414 sqkm

Number of districts: 23

Population: about 2 million

Altitude: 171 m above sea level

Language: German

Vienna, a city with about two million inhabitants, is situated at the heart of Europe. Due to its unique geographic and geopolitical location, Vienna has become a centre of international events as well as a popular conference venue. Vienna hosts one of the United Nations headquarters and is home to a number of other international organisations.

Vienna's ever-changing history has left an indelible mark on the city, a mark also manifest in a rich cultural heritage. The city's ultimate fascination stems from merging imperial grandeur with cosmopolitan spirit, a combination which emerged after the break-up of the Austro-Hungarian Monarchy. Viennese writers, musicians, artists, and scientists have influenced many aspects of our modern world. Vienna has taken part in all major political developments of the 20th century. Shaped over the centuries when it served as capital of a huge empire, Vienna will always arouse a feeling of nostalgia.

Today, Vienna offers old historical palaces and modern shopping centres, traditional hotels, Austrian food and haute cuisine, typical Viennese coffee houses and restaurants, outstanding opera performances, classical concerts and open-air festivals, antique shops and elegant boutiques – all joined together in incomparable Viennese harmony. In 2001, the city centre was designated a UNESCO World Heritage Site. Also, Vienna is clean, green and save. This fact was mirrored by the Mercer Survey 2009 where Vienna was ranked first as the city with best quality of living worldwide.

Banking

The venue is within walking distance of several banks. Cash dispensers are available at almost every bank and operate 24 hours daily.

Electricity

The main voltage in Austria is 220V.

Currency

The official Currency in Austria is EURO (€).

Shopping

Shops are generally open from Monday to Friday 09:00–18:00 and Saturday 09:00–17:00.

Time

Vienna is in the Central European Time Zone, one hour ahead of Greenwich Mean Time (GMT).

Tipping

Service is usually included in the prices in bars and restaurants. Tips are always welcome and usually 10%.

Useful Telephone Numbers

Ambulance: 144

Police: 133

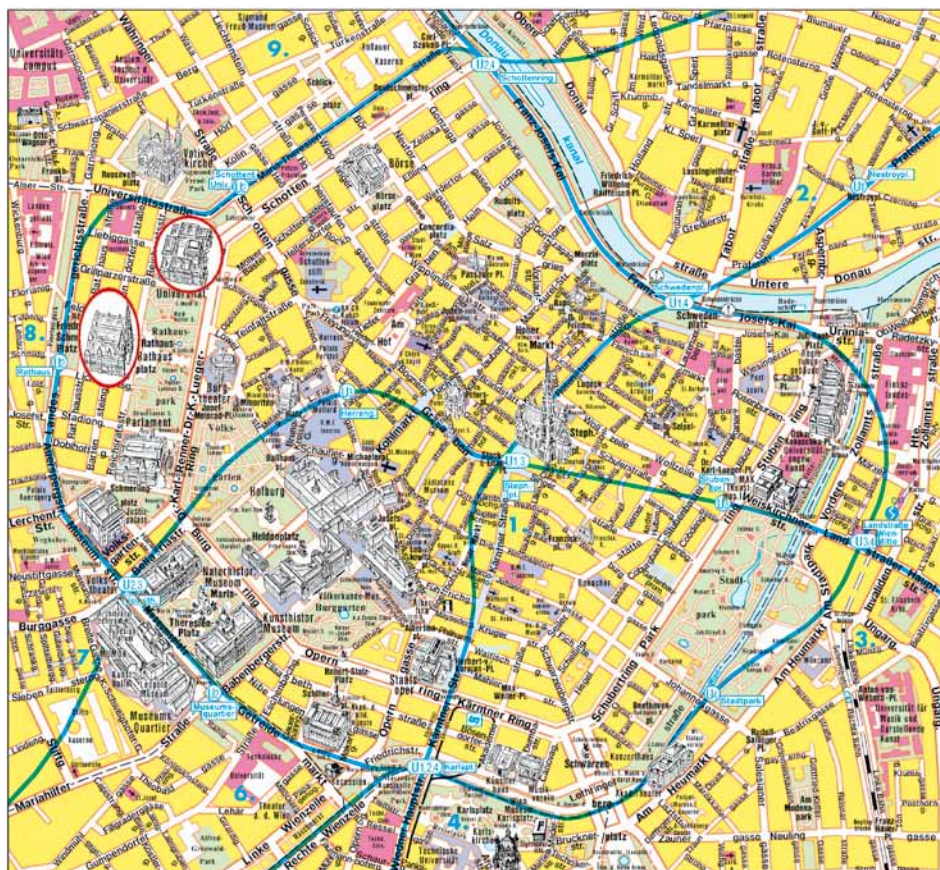
Fire Brigade: 122

Taxi: +43 (0)1 31300 or +43 (0)1 40 100

Weather

Temperatures in Vienna in September usually range between 20–25° C by day, nights are cooler.

For detailed information on weather forecast, please visit: www.wetter.at



Venue:
University of Vienna



Conference Dinner:
Wiener Rathauskeller

© 2005 Blackwell Publishing Ltd *Journal of Internal Medicine* 257: 105–112



OFFICIAL SOCIAL PROGRAMME

Congress Welcome Reception

Wednesday, September 14 2011, 20:00

Buffet Reception for registered participants, accompanying persons and exhibitors at Heurigen Furhgassl-Huber on invitation by the Mayor and Governor of Vienna. Tickets are included in the regular fee for participants, but registration is **obligatory**. Extra tickets for exhibitors and accompanying persons can be purchased at EUR 20,00 per person at the registration desk. The number of participants is limited to 200.



Tickets: Limited number of tickets still available – ask at the Registration counter

Conference Dinner

Friday, 16 September 2011, 20.00

The dinner will take place at the Wiener Rathauskeller and includes a classic Viennese 3 course menu as well as an appetizer and drinks.

The Wiener Rathauskeller offers a unique blend of tradition and enjoyment in the heart of Vienna, only a few minutes walking distance from the congress venue, the University of Vienna.

Since its completion in 1883, Vienna's Rathaus, or City Hall, has been the headquarter of the city and provincial government. Architect Friedrich Schmidt designed the basement vault as a place for "food and drink". In 1899, the Wiener Rathauskeller was inaugurated by then Mayor of Vienna, Dr. Karl Lueger, with a toast to "His Imperial and Royal Apostolic Majesty, Emperor Franz Josef I", and to this day it is known as the home of "good taste".

Dress code: formal

Price per person: EUR 65,00



Tickets: Limited number of tickets still available – ask at the Registration counter

SCIENTIFIC PROGRAMME

THURSDAY, SEPTEMBER 15, 2011

GROSSER FESTSAAL		HÖRSAAL 33	POSTER AREA
09:00 – 09:10	Welcome & Introduction		
09:10 – 10:00	Session 1 Upper extremity I		
10:00 – 10:30	Coffee Break at Exhibition Area		
10:30 – 11:00	Baumann Lecture <i>Anand Nene</i>		
11:00 – 12:00	Session 2 Clinical outcome I		
12:00 – 13:00	Lunch at Exhibition Area		
13:00 – 14:30			Poster Session 1
14:30 – 15:30	Session 3 Gait Disorders I		
15:30 – 16:00	Coffee Break at Exhibition Area		
16:00 – 17:00	Session 4 Cerebral Palsy I	Session 4b Imaging Method, Running, Pressure Distribution	
17:15 – 19:00	ESMAC Annual General Meeting Laboratory Peer Review		

Colour Codes:

Abstract Sessions

Invited Lectures

Social Events

Breaks

FRIDAY, SEPTEMBER 16, 2011

GROSSER FESTSAAL		HÖRSAAL 33	POSTER AREA
09:00 – 10:00	Session 5 Simulations	Session 5b Gait Disorders II	
10:00 – 10:30		Coffee Break at Exhibition Area	
10:30 – 11:00	Keynote Lecture <i>Kristina Müller</i>		
11:00 – 12:00	Session 6 Cerebral Palsy II	Session 6b Sit/Stand	
12:00 – 13:00		Lunch at Exhibition Area	
13:00 – 14:30			Poster Session 2
14:30 – 15:30	Session 7 Upper Extremity II	Session 7b Foot Kinematics	
15:30 – 16:00		Coffee Break at Exhibition Area	
16:00 – 17:00	Session 8 Technical Development	Session 8b Deviation Indexes/Reliability	
19:00 – 21:00	Conference Dinner at Wiener Rathauskeller		

Colour Codes:

- Abstract Sessions
- Invited Lectures
- Social Events
- Breaks

SATURDAY, SEPTEMBER 17, 2011**GROSSER FESTSAAL**

09:00–10:20	Session 9 Clinical outcome II
10:20–10:50	Coffee Break @ Exhibition Area
10:50–11:20	Keynote Lecture <i>Christian Peham</i>
11:20–12:20	Session 10 Scorse/EMG
12:20–12:45	Best Poster Award
12:45–13:00	Closing of the conference

Colour Codes:

Abstract Sessions

Invited Lectures

Social Events

Breaks

THURSDAY, SEPTEMBER 15, 2011

09:00–09:10

Großer Festsaal

Welcome and Introduction

09:10–10:00

Großer Festsaal

Session 1 - Upper Extremity I

Chairmen: M. Gföhler, J. Stebbins

1. O01 - 3D Kinematic Analysis of Upper Extremity Function in Children
W. Girsch, C. Karner, B. Attwenger, G. Ketzer, A. Kranzl;
Vienna/AT
2. O02 - Estimation of Requirements for an Upper Extremity Support Using Inverse Dynamics and Motion Analysis
J. Karner, M. Gföhler, W. Reichenfelder;
Wien/AT
3. O03 - Upper Extremity Motion in Adults with Cerebral Palsy
S. Wolf, L. Kost, F. Braatz;
Heidelberg/DE
4. O04 - New Method for Detection of Shoulder Movement During Daily Activity
C. Duc, C. Pichonnaz, J. Bassin, B. Jolles, A. Djahangiri, A. Farron, K. Aminian;
Lausanne/CH
5. O05 - Development and Reliability of the Oxford Trunk Model
J. Bates, J. Stebbins, T. Theologis;
Oxford/UK

10:00–10:30

Coffee Break

Exhibition Area

10:30–11:00

Großer Festsaal

Baumann Lecture

Quadriceps Femoris – A Misnomer

A. Nene



Curriculum Vitae of Dr. Anand Nene

Dr Anand Nene obtained degrees of Bachelor of Medicine and Bachelor of Surgery from the University of Bombay. He further trained in orthopaedic surgery and obtained a post-graduate degree of Master of Surgery, also from the University of Bombay. On arrival in the United Kingdom he obtained a further Post-Graduate degree of Master of Orthopaedic Surgery from the University of Liverpool. After gaining further experience in the United Kingdom he returned to India. However, circumstances brought him back to the United Kingdom. He worked as a Medical Research Fellow in the Orthotic Research & Locomotor Assessment Unit (ORLAU) at the Robert Jones and Agnes Hunt Orthopaedic Hospital in Oswestry. There he developed his interest in the subjects of Gait, Paraplegic

locomotion, Functional Electrical Stimulation and use of Gait Analysis for clinical decision making in Cerebral Palsy. In January 1994 he arrived in the Netherlands. Here he retrained as a specialist in Physical Medicine and Rehabilitation (PMR). He was awarded PhD by the University of Twente for his work on hybrid paraplegic locomotion.

Presently, he works as a specialist in PMR in Het Roessingh Rehabilitation Centre and also as a Research Fellow in Roessingh Research & Development. He was instrumental in establishing a clinical gait analysis service in Het Roessingh. He has published number of articles in the medical literature. His present research interests are: pathophysiology and management of spasticity, management of gait abnormalities and improvement of arm hand function in neurological disorders.

Abstract

Human body has 3 types of striated muscles, namely, mono-articular, bi-articular and poly-articular. Both human and animal studies suggest that mono- and bi-articular muscles have different roles in the complex movements such as walking. Mono articular muscles show simple unidirectional activation patterns, whereas bi-articular muscles exhibit complex patterns of movements. Sometimes these bi-articular muscles are considered to be bi-functional, i.e. they exert opposite actions at the joints they span, either individually or at the same time, e.g. flexion at one joint and the extension at the other. Bi-functional muscles control the direction of external forces by regulating the distribution of the net moments across the joints. Rectus Femoris (RF) is one of such muscles.

Quadriceps Femoris is one the dominant muscle groups at the knee. Anatomically it is described to consist of 4 heads, namely, Vastus Lateralis, Vastus Intermedius, Vastus Medialis and Rectus Femoris.

The Vastii are mono-articular crossing only the knee joint, but RF is a bi-articular muscle. In the past, function of RF has been described as extension of the knee during loading response along with the Vastii and restricting the knee flexion during pre- and initial swing. Although these are 2 functions, however, in the real sense, this does correspond to a definition of being bi-functional. The electromyography (EMG) studies that formed the basis of above mentioned functions were carried out using surface electrodes.

Studies carried out using both surface and fine wire electrodes in healthy subjects showed that RF is active only in the pre- and swing phases during walking at normal speeds. At faster walking speeds there is increasing activity of RF during terminal stance, probably to prevent excessive hip extension.

Role played by abnormal activity of RF alone in cerebral palsied children is well established. A study carried out in subjects who walked with a stiff knee gait after stroke also showed, in majority of subjects, only RF activity was abnormal. Vastii did not show abnormal activity pattern.

This shows that in healthy as well as in diseased RF is a completely different muscle and to include RF along with Vastii as part of Quadriceps does not make sense. Vastus Lateralis, Vastus Intermedius & Vastus Medialis should be renamed as Triceps Femoris & RF should have its own identity as a separate muscle with a different function than Triceps Femoris.

11:00–12:00

Großer Festsaal

Session 2 - Clinical Outcome

Chairmen: R. Brunner, T. Theologis

1. O06 - The Kinematic Effects of Common Peroneal Functional Electrical Stimulation (FES) in Chronic Stroke (CVA) and Multiple Sclerosis (MS) Using a 3-D Model of the Shoe
E. Pratt, J. Van der Meulen, M. Reeves;
Sheffield/UK
2. O07 - Patellar Tendon Shortening Improves Knee Extension in Cerebral Palsy
R. Sossai¹, R. Brunner¹, M. Gaston¹, C. Camathias¹, O. Tirosh², E. Rutz¹;
¹Basle/CH, ²Parkville/AU
3. O08 - Biomechanical Study on the Functional Performance of a New Microprocessor-Controlled Prosthetic Knee Joint
T. Schmalz¹, M. Bellmann¹, E. Ludwigs¹, S. Blumentritt²;
¹Göttingen/DE, ²Duderstadt/DE
4. O09 - Predictive Factors To Determine The Outcome After Single Event Multilevel Surgery For Gait Correction In Children With Cerebral Palsy Using The Gait Profile Score
S. Donath¹, E. Rutz², R. Baker¹, O. Tirosh¹, H. Graham¹;
¹Parkville/AU, ²Basle/CH
5. O10 - The Effect of Distal Rectus Femoris Transfer as a Part of Multilevel Surgery in Spastic Diplegia - a Randomized Clinical Trial
T. Dreher, S. Wolf, J. Korber, F. Braatz;
Heidelberg/DE
6. O11 - Knee Kinetic Pattern During Gait and Anterior Knee Pain Before and After Rehabilitation in Patients with Patellofemoral Pain Syndrome
B. Claudon, M. Poussel, C. Billon-Grumillier, J. Paysant, C. Beyaert;
Nancy/FR

12:00–13:00

Lunch

Exhibition Area

13:00–14:30

Poster Area

Poster Session 1

Odd poster numbers

- P01 Analysis of Balance, Symmetry of Body and Functionality in Hemiparetic Patients After Balance Training Trough Visual Biofeedback
L. Barcala¹, F. Colella¹, M. C. Araujo¹, P. Lucareli¹, A. Salgado¹, C. Oliveira²;
¹São Paulo/BR, ²São Paulo - Sp/BR
- P03 Analysis of the Static Balance of Elderly with Different Levels of Physical Activity
I. P. Buzutti¹, C. Bomfim¹, B. Ribeiro¹, R. Costa¹, J. G. Morelli¹,
P. R. Lucareli¹, A. Salgado¹, C. Oliveira²;
¹São Paulo/BR, ²São Paulo - Sp/BR
- P05 Static Balance Among Children with Down Syndrome
B. Ribeiro¹, L. Grecco¹, J. C. Corrêa¹, P. R. Lucareli¹, A. Salgado¹,
C. Oliveira²;
¹São Paulo/BR, ²São Paulo - Sp/BR
- P07 Postural Stability in Children with Cerebral Palsy Treated with Botulinum Toxin A.
M. Bonikowski¹, U. Nowacka²;
¹Wiązowna/PL, ²Wrocław/PL
- P09 Bradykinesia in Different Parkinsonian Syndromes. A Kinematic Motion Analysis of Hand Movements
T. Wolfsegger¹, I. Rotaru¹, R. Topakian¹, H. Schwameder², F. T. Aichner¹;
¹Linz/AT, ²Salzburg/AT
- P11 iShould: Functional Evaluation of the Shoulder Using a Smartphone
L. Oïhénart, C. Duc, K. Aminian;
Lausanne/CH
- P13 A Study of the Reproducibility of the Marker Application of the Cleveland Clinic Marker Set including the Plug-In Gait Upper Body Model in Clinical Gait Analysis
B. Svoboda, A. Kranzl;
Vienna/AT

- P15 Estimation of Co-contraction by Computational Musculoskeletal Modeling is Enhanced by Including Experimental EMG Recordings
A. Willemse, C. Doorenbosch, J. Harlaar;
Amsterdam/NL
- P17 Muscle Fatigue in Children with Cerebral Palsy Compared to Typically Developing Children and Young Adults
A. Doorenbosch, A. Dallmeijer, A. Pollice, M. Steenbergen, H. Houdijk;
Amsterdam/NL
- P19 One-year Gait Analysis Study in Spastic Diplegic Children after Selective Dorsal Rhizotomy
E. Carraro¹, S. Gualdi¹, V. Marconi¹, M. Santin¹, A. Martinuzzi¹, S. Zeme², E. Trevisi¹;
¹Conegliano (tv)/IT, ²Torino/IT
- P21 Does The Proximal Femoral Varisation Osteotomy Negatively Affects Gait Parameters In Patients Suffering from Legg-Calvé-Perthes Disease?
K. Urbásek, J. Jadrný, L. Kaiser-Šrámková, J. Poul;
Brno/CZ
- P23 Correlation Between Gait Deviation Index and Pain Perception in Patients With Lumbar Spinal Stenosis Pre- and Post-physical Exercise.
S. Garbelotti Jr.¹, P. R. Lucareli², W. Godoy², M. Bernal², A. Ramalho Jr.², J. M. Greve²;
¹São Caetano Do Sul/BR, ²São Paulo/BR
- P25 Does Experimentally Induced Stiffness of the Spine Make Healthy Subjects Walk Like Low Back Pain Patients?
S. Bruijn¹, O. Meijer², W. Wu³, X. Lin³, H. Hu², J. Van Dieën²;
¹Leuven/BE, ²Amsterdam/NL, ³Quanzhou/CN
- P27 Changes in Surface EMG Patterns in Children with Cerebral Palsy During Robotic Gait Training
M. Bonikowski¹, P. Mrozek²;
¹Wiązowna/PL, ²Zagórze N. Warsaw/PL

- P29 Effects of Foot Orthoses on Gait Pattern of Malalignment Syndrome Patients
S. Kim, S. Ahn, S. Park, J. Seo, C. Kim;
Daegu/KR
- P31 Case Presentation: Distal Femoral Extension Osteotomy as Treatment for
Relapse of Knee
Flexion Contracture in a 14 Year Old Boy With Spastic Hemiparesis
A. Krebs,
Vienna/AT
- P33 24h Bracing for Tip Toe Walking Children with Cerebral Palsy.
R. Csepan, C. Grasl, A. Kranzl;
Vienna/AT
- P35 3D Centre of Mass Model Using Kinematics only
B. Müller¹, P. Pickering²;
¹*Terrassa (Spain)/ES*, ²*London/UK*
- P37 Evaluation of the FAMP-Coach Protocol in Clinical Gait Analysis
M. Janssen, B. Groen, A. van der Zijden, B. Nienhuis;
Nijmegen/NL
- P39 Development of a Virtual Mirror Box for Spatial and Temporal Manipulation
of Visual Feedback on Body Movement During Gait: A Technical Evaluation
G. Barton¹, A. De Asha², T. Geijtenbeek³, M. Robinson¹;
¹*Liverpool/UK*, ²*Bradford/UK*, ³*Amsterdam/NL*
- P41 Design Concept for a Mobile Arm Support
W. Reichenfelser, M. Gföhler, J. Karner;
Wien/AT
- P43 Underwater Markerless Gait Analysis: a Pilot Study
A. Mantoan¹, M. Cortesi², E. Ceseracciu¹, Z. Sawacha¹, S. Fantozzi²,
G. Gatta², C. Cobelli¹;
¹*Padova/IT*, ²*Bologna/IT*
- P45 How Sensitive is Induced Acceleration Analysis on the Rigid Foot-Floor Contact
Model: A
Parametric Analysis
R. Wang, E. Gutierrez-Farewik;
Stockholm/SE

- P47 Objective selection of a representative trial out of several movement analysis curves by
Principal Component Analysis
K. Schweizer, J. Romkes, P. C. Cattin, C. Huber, R. Brunner;
Basel/CH
- P49 Kinematics and Kinetics Differences Between Normal- and Flat- Arched Foot Posture During Landing
C. Kim, S. Park, S. Ahn, J. Seo, J. Jang;
Daegu/KR
- P51 Walking Ability and Energy Expenditure in Post-Stroke Patients with a Ankle-Foot Orthosis
J. Kato¹, N. Maeda¹, M. Murakami²;
¹Tatsuno/JP, ²Kobe/JP
- P53 Changes in Configuration of Foot Joints during Ankle Dynamometry of Children With Spastic Cerebral Palsy: a Pilot Study
M. Bénard, J. Becher, J. Harlaar, P. Huijing, R. Jaspers;
Amsterdam/NL
- P55 Pathological Gait of Patients With Musculoskeletal Injuries after Polytrauma
R. Jakusonoka, Z. Pavare, A. Juntins, T. Ananjeva, K. Gorbacova;
Riga/LV
- P57 Spasticity Can be Quantified during Passive Muscle Stretch in an Objective and Repeatable Way by Integrating Electrophysiological and Biomechanical Signals.
L. Bar-On¹, E. Aertbeliën², H. Wambacq², C. Huenaerts¹, K. Lambrechts², H. Bruyninckx³, B. Dan⁴, G. Molenaers¹, K. Desloovere³;
¹Pellenberg/BE, ²Heverlee/BE, ³Leuven/BE, ⁴Brussels/BE
- P59 The Biomechanics of the Reaching Movement in Friedreich and Stroke Patients.
M. Caimmi¹, M. Malosio², N. Pedrocchi², F. Vicentini², L. Molinari Tosatti², F. Molteni³;
¹Costa Msasnaga (Ic)/IT, ²Milano/IT, ³Costamasnaga (Ic)/IT

- P61 Evaluation of Postural Stability after Reconstruction of Anterior Cruciate Ligament (ACL) in Juveniles using Biodex Balance System
J. Goetz¹, S. Dullien¹, P. Lenz¹, J. Grifka¹, H. Eichhorn², K. Fehske³;
¹Bad Abbach/DE, ²Straubing Regensburg/DE, ³Wuerzburg/DE
- P63 Plantar Roll-Over Patterns Of Obese And Diabetics – A Multivariate Approach
J. Lange¹, C. Maiwald¹, M. Stumvoll², K. Miehle², T. Milani¹;
¹Chemnitz/DE, ²Leipzig/DE
- P65 Kinematic Characteristics during Walking in Patients with Progressive Pseudorheumatoid Arthropathy of Childhood
M. Hartmann¹, F. Kreuzpointner², R. Haefner¹, J. Haas¹;
¹Garmisch-Partenkirchen/DE, ²Munich/DE
- P67 Kinematic Analysis of Gait in Subjects with Lumbar Disc Herniation
Z. Svoboda, M. Janura, A. Kaluzna;
Olomouc/CZ
- P69 The Clinical Impact of Applying a Criterion for Predicting Rectus Femoris Transfer Surgery
Outcomes: Evaluation via Retrospective Case-Control Design
A. Rozumalski¹, D. Thawrani², T. Novacheck², M. Schwartz¹;
¹St Paul/MN/US, ²St. Paul/MN/US
- P71 Repeatability of Three-Dimensional Knee Kinematics for Eleven Motor Tasks
B. Callewaert¹, L. Scheys¹, A. Leardini², P. Wong¹, J. Bellemans¹, K. Desloovere¹;
¹Leuven/BE, ²Bologna/IT
- P73 Gait Patterns in a Reference Dataset of Healthy Children
S. Delgado¹, D. Gómez-Andrés¹, I. Pulido Valdeolivas¹, J. López-López², J. Martín¹, F. Morán¹, E. Rausell¹;
¹Madrid/ES, ²San Sebastian De Los Reyes/ES
- P75 Evaluating Gait Adaptability in Adolescents With CP - A Treadmill Approach
M. Hoesl¹, L. Bruinink², J. Harlaar¹, H. Houdijk¹;
¹Amsterdam/NL, ²Wijk Aan Zee/NL

- P77 Recognition of Physical Activity Adapted to Rehabilitation
L. Fradet, F. Marin;
Compiègne/FR
- P79 Daily Usage of Computed Gait Analysis in Clinical Rehabilitation of Motor Disabled Patients
S. Portnoy, J. Tsenter, I. Schwartz;
Jerusalem/IL
- P81 Research into Kinematics of Motion of People after Stroke
J. Jurkojc, R. Michnik, M. Gzik;
Gliwice/PL

14:30–15:30

Großer Festsaal

Session 3 - Gait Disorders I

Chairmen: B. Westhoff, A. Nene

1. O12 - Gait Analysis after Growth Arrest in Patients with Slipped Capital Femoral Epiphysis (SCFE)
K. Ruhe, K. Weimann-Stahlschmidt, C. Zilkens, R. Krauspe, *B. Westhoff*;
Duesseldorf/DE
2. O13 - Interjoint Coordination of the Lower Extremity in Patients with Juvenile Idiopathic Arthritis (JIA). A Longitudinal Study.
F. Kreuzpointner¹, M. Hartmann², R. Haefner², J. Haas², A. Schwirtz¹;
¹*Munich/DE*, ²*Garmisch-Partenkirchen/DE*
3. O14 - Preliminary Results of Trans-Femoral Amputees Walking With a Microprocessor Controlled Prosthetic Foot
D. Heitzmann, M. Alimusaj, F. Braatz, S. Wolf;
Heidelberg/DE
4. O15 - Joint Kinematics Following Bi-Compartmental Knee Replacement During Daily Life Motor Tasks
L. Scheys¹, J. Leffler², T. Planté-Bordeneuve³, B. Callewaert³, L. Labey¹, J. Bellemans³, A. Franz²;
¹*Leuven/BE*, ²*Siegen/DE*, ³*Lubbeek/BE*

5. O16 - Compensatory Mechanisms of Upper and Lower Body Movements for Anatomic Leg Length Discrepancy
M. Freslier¹, E. Rutz², M. Gaston², R. Brunner², J. Romkes¹;
¹Basel/CH, ²Basle/CH
6. O17 - Abnormal Loading of the Major Joints in Knee Osteoarthritis and the Response to Knee Replacement
A. Metcalfe¹, C. Stewart², N. Postans², D. Barlow², A. Dodds¹, G. Whatling¹, C. Holt¹, A. Roberts²;
¹Cardiff/UK, ²Oswestry/UK

15:30–16:00 Coffee Break Exhibition Area

16:00–17:00 Großer Festsaal

Session 4 - Cerebral Palsy I

Chairmen: M. Jacquemier, W. Strobl

1. O18 - What are the Most Important Clinical Measurements Affecting Gait in Patients with Cerebral Palsy?
Y. Sagawa¹, E. Watelain¹, G. De Coulon², A. Kaelin², S. Armand²;
¹Valenciennes/FR, ²Geneva/CH
2. O19 - Discrimination of the Abnormal Gait Parameters due to Increased Femoral Anteversion from the Other Cerebral Palsy Related Effects
N. E. Akalan, Y. Temelli, S. Kuchimov;
Istanbul/TR
3. O20 - The Relationship Between Arm Posturing and Gait Deviation in Teenagers and Young Adults with Spastic Unilateral Cerebral Palsy
D. Lundh¹, S. Coleman², J. Riad³;
¹Skovde/SE, ²Dallas/US, ³Skövde/SE
4. O21 - Patellar Tendon Shortening In Combination With Supracondylar Extending Osteotomy Provides The Best Correction Of Severe Knee Dysfunction In Cerebral Palsy
E. Rutz¹, R. Baker², O. Tirosh², R. Sossai¹, M. Gaston¹, R. Brunner¹;
¹Basle/CH, ²Parkville/AU
5. O22 - The Phenomenon of Ben Lomonding in Cerebral Palsy Gait.
S. Gibbs¹, S. Williams¹, B. Meadows²;
¹Dundee/UK, ²Glasgow/UK

6. O23 - Addressing Homogeneity between Affected and Unaffected Sides and Upper and Lower Extremities in Unilateral Cerebral Palsy
D. Lundh¹, S. Coleman², J. Riad³;
¹Skövde/SE, ²Dallas/US, ³Skövde/SE

16:00–17:00

HS 33

Session 4b - Imaging Method, Running, Pressure Distribution

Chairmen: J. Duysens, E. Broström

1. O24 - Plantar Flexor Muscle Volume and Concentric Work in Unilateral Cerebral Palsy
J. Riad¹, C. Modlesky², E. Broström³;
¹Skövde/SE, ²Wilmington/US, ³Stockholm/SE
2. O25 - The Influence of Different In-Shoe Inserts on the Plantar Pressure During the Gait of Healthy Elderly People
M. Castro¹, D. Soares¹, E. Mendes², L. Machado¹;
¹Porto/PT, ²Arcoselo/PT
3. O26 - A Comparison of Shank Segment Parameters between Hemiplegic and Typically Developing Individuals
T. Niiler¹, J. Riad²;
¹Media, Pa/US, ²Skövde/SE
4. O27 - UPMOVE: Unraveling Patterns of Human Movements
A. Daffertshofer, R. Kaptein;
Amsterdam/NL
5. O28 - Effects of Chemodenervation of the Rectus Femoris Muscle in Adults with Spastic Paresis and a Stiff Knee Gait: A Systematic Review.
M. Tenniglo, M. Nederhand, A. Nene, K. Harmelink, H. Rietman, J. Buurke;
Enschede/NL
6. O29 - Joint Kinematics in Runners With Patellofemoral Pain Syndrome
J. Leitch¹, K. Reilly², J. Stebbins², A. Zavatsky²;
¹Headington/UK, ²Oxford/UK

17:15–19:00

Großer Festsaal

ESMAC Annual General Meeting

Laboratory Peer Review

(members only)

19:00–21:00

Elise Richter Saal

Vicon User Group Meeting

19:00–21:00

HS 28

Xsens User Group Meeting

FRIDAY, SEPTEMBER 16, 2011

09:00–10:00

Großer Festsaal

Session 5 – Simulations

Chairmen: I. Jonkers, H. Böhm

1. O30 - Ultrasound Measures of Muscle Structural Pathologies Related to Impaired Power Production During Gait in Children With Cerebral Palsy
H. Böhm¹, A. Brand², L. Döderlein¹, F. Stief³;
1Aschau Im Chiemgau/DE, 2München/DE, 3Frankfurt Am Main/DE
2. O31 - How Pathological Gait Kinematics, Increased Femoral Anteversion and Neck Shaft Angle Adversely Affect the Loading Conditions of the Femoral Head During Gait in Children With Cerebral Palsy.
L. Bosmans, G. Lenaerts, L. Scheys, I. Jonkers;
Leuven/BE

O32 Cancelled
3. O33 - Popliteal Angle and Straight Leg Raising: Clinical and Musculoskeletal Modeling Assessment.
E. Desailly¹, D. Bouchakour¹, D. Yepremian¹, F. Hareb¹, L. Lejeune¹, P. Lacouture², P. Sardain², N. Khouri³;
¹St Fargeau Ponthierry/FR, ²Futuroscope Cedex/FR, ³Paris/FR
4. O34 - Similar Muscles Contribute to Horizontal and Vertical Acceleration of the Center of Mass in Forward and Backward Walking
K. Jansen, F. De Groote, J. Duysens, I. Jonkers;
Leuven/BE

5. O35 - Joint Moments in Children with Cerebral Palsy based on Biomechanical Models
R. Hainisch¹, M. Zubayer-UI-Karim¹, A. Kranzl¹, M. Gföhler¹, M. Pandy²;
¹Wien/AT, ²MelbourneVIC/AU
6. O88 - Quantifying Gait Deviations in Patients with Rheumatoid Arthritis Using the Gait Deviation Index
A. Esbjörnsson¹, A. Rozumalski², M. Schwartz², M. Iversen³, P. Wretenberg¹, E. Broström¹;
¹Stockholm/SE, ²St PaulMN/US, ³BostonMA/US

09:00–10:00

HS 33

Session 5b – Gait Disorders II

Chairmen: J. Stout, L. Scheys

1. O36 - Potential Effects of an Increased Aerobic Capacity on Walking Effort and Walking Speed in Lower Limb Amputees.
D. Wezenberg¹, L. van der Woude², A. de Haan¹, H. Houdijk¹;
¹Amsterdam/NL, ²Groningen/NL
2. O37 - Adaptation Strategies of Patients With a Transtibial or Transfemoral Amputation During Level Walking: a Systematic Review.
E. Prinsen, M. Nederhand, J. Rietman;
Enschede/NL
3. O38 - Self-Esteem and Sense of Coherence in Relation to Upper- and Lower Extremity Movement Deviation During Walking in Teenagers and Young Adults with Mild Unilateral Cerebral Palsy
J. Riad¹, E. Broström², A. Langius-Eklöf²;
¹Skövde/SE, ²Stockholm/SE
4. O39 - The Influence of Auditory Cueing on Sagittal Kinematics in Healthy Adults
K. Sheehan, J. Gormley;
Dublin/IE
5. O40 - Mechanisms Underlying Speed Changes After Chemodenervation Intervention in Limited and Full Community Ambulators with Stroke
K. Nolan, PhD¹, M. Yarossi, BS¹, E. Elovic, MD²;
¹West OrangeNJ/US, ²Salt Lake CityUT/US

6. O41 - Cardiorespiratory Load of Walking in a Gait Orthosis Compared to Assisted Overground Walking in Non-Independently Walking Stroke Patients
M. van Nunen, T. W. Janssen, K. Gerrits, A. de Haan;
Amsterdam/NL

10:00–10:30 Coffee Break

Exhibition Area

10:30–11:00

Großer Festsaal

Keynote lecture

Neurorehabilitation in children: The future of motor therapy

K. Müller, *Meerbusch/DE*



Curriculum Vitae of Priv.-Doz. Dr. med. Kristina Müller

11.06.1957: born in Kiel

1983 Medical Degree, Kiel University

Oct. 82–Oct. 83: Internship (Pediatrics, Internal Medicine, Surgery) at the
“Centre Hôtelier et Universitaire”, Montpellier, Frankreich

1983/84: Medical Thesis (Precocious Puberty: Effects of treatment) in
the Department of Pediatrics of the “Centre Hôtelier et
Universitaire”, Montpellier, France

from July 1984: Training in General Pediatrics in the Department of Pediatrics
at the “Heinrich-Heine“-Universität Düsseldorf, Specialization
in Pediatric Neurology (Prof. H.-G. Lenard)

August 1985: MD Thesis at the “Rheinischen Friedrich-Wilhelms”
Universität Bonn

Jan. 89–Dec. 90: Research Project about “Motor development in children”
sponsored by the Ministry of Research and Technology of
Germany.

- November 1991:** Board Qualification in Pediatrics
- January 1992:** Senior Registrar at the Department of Pediatrics of the „Heinrich-Heine“-Universität, Düsseldorf
- Oct. 92–April 93:** Fellowship at the Hospital for Sick Children , Department of Neuropaediatrics (Prof. B. Neville), Great Ormond Street, London
- February 93:** Habilitation
- May 93–Nov. 93:** Training in Neurology in the Department of Neurology „Heinrich-Heine“ - Universität Düsseldorf (Prof. Dr.H-J Freund)
- From May 93:** Consultant at the Department of Pediatrics at “Heinrich-Heine-Universität“ Düsseldorf
- Feb–Dec 99:** Research Project: Locomotion in Children with mit Cerebral Palsy
- Jan.–Feb. 2000:** Work at the Département de Pédiatrie, Unité de Rééducation Neuropédiatrique (Dr.C. Billard), Centre Hospitalier Universitaire de Bicêtre, Le Kremlin-Bicêtre and Hôpital National de Saint-Maurice, Rééducation des pathologies neurologiques acquises de l'enfant (Dr. A. Laurent-Vannier), Saint-Maurice, France

Abstract

Within the last decade there was a dramatic change in paradigms in motor rehabilitation: Physiotherapy is no longer understood as “hands on” treatment but concentrates more on “hands off” and coaching activities. The traditional “school” oriented concepts are more and more replaced by therapeutic procedures which are derived from neurobiological and neurobehavioural knowledge and are evidence based.

Such evidence based therapeutic concepts are e.g. locomotor training on treadmills with partial body weight support to restore gait ,constraint induced training for arm function in hemiparetic conditions, robot assisted therapies for arm and leg function and neurological music therapy using rhythmical cueing of action.

Most of these techniques originally created for adult patients have in the meantime been adopted to usage in children with various congenital or aquired neurological conditions.

To bridge the gap between evidence based therapeutic concepts and the need for individualized “custom tailored” approaches we developed a concept grouping several evidence based therapeutic procedures can into modules to ascertain that every pa-

tient has a chance to be treated with a procedure likely to improve his condition even in limited length of stay. So a quality proven rehabilitative therapy can be offered.

For the future development of even better techniques thinking of physicians and therapists should be oriented along implementation of elementary rules of e.g. motor learning (such as feedback, shaping, ecological validity) rather than following “schools” or “cook-book recipes”.

Both neuroscientific principles of plasticity and motor learning as well as examples of therapeutic modules will be demonstrated.

11:00–12:00

Großer Festsaal

Session 6 - Cerebral Palsy II

Chairmen: S. Senst, P. Thomason

1. O42 - Is Interlimb Coordination during Walking Preserved in Children with Cerebral Palsy?
P. Meyns¹, L. Van Gestel², S. Bruijn¹, K. Desloovere¹, S. Swinnen¹, J. Duysens¹;
¹Leuven/BE, ²Heverlee/BE
2. O43 - 3D Thorax Kinematics During Gait in Children with Cerebral Palsy (CP)
E. Pratt, W. Dickens, M. Bell;
Sheffield/UK
3. O44 - Discovering Optimal Patient Selection Criteria Using the Random Forest Algorithm: Application to Intramuscular Psoas Lengthening
M. Schwartz,
St Paul MN/US
4. O45 - Quantified spasticity measurement for gastrocnemius and hamstrings by integration of multi-dimensional signals, in children with cerebral palsy
K. Desloovere¹, L. Bar-On¹, K. Lambrechts², H. Wambacq², C. Hunaerts¹, H. Bruyninckx³, G. Molenaers¹, A. Van Campenhout¹, E. Aertbelien²;
¹Pellenberg/BE, ²Heverlee/BE, ³Leuven/BE
5. O46 - Discrimination between the neural and non-neural origin of increased joint stiffness of the ankle in Cerebral Palsy
K. de Gooijer-van de Groep¹, E. de Vlugt², J. de Groot¹, H. van der Heijden-Maessen¹, D. Wielheesen¹, J. Harlaar³, M. van Wijlen-Hempel¹, J. Arendzen¹, C. Meskers¹;
¹Leiden/NL, ²Delft/NL, ³Amsterdam/NL

6. O47 - Changes in Inter-Segmental Coordination and Gait Performance After the Rectus Femoris Transfer Procedure in Children with Cerebral Palsy
J. Carollo¹, K. Worster², Z. Pan², F. Chang², J. Valvano²;
¹Aurora/US, ²AuroraCO/US

11:00–12:00

HS 33

Session 6b - Sit/Stand

Chairmen: N. Darros, M. G. Benedetti

1. O48 - Sagittal Balance: Repeatability of an Intervertebral Net Load Evaluation Protocol for Posture Assessment
V. Pomeroy¹, B. Blondel¹, J. Jouve¹, R. Dumas², Y. Glard¹, E. Viehweger¹, G. Bollini¹;
¹Marseille/FR, ²Lyon/FR
2. O49 - Stride and Balance Characteristics of Children Learning to Walk
J. Stebbins, J. Bates, A. Wainwright, T. Theologis;
Oxford/UK
3. O50 - The Influence of Gaze Behaviour on Postural Control from Early Childhood into Adulthood
A. Schärli, R. van de Langenberg, K. Murer, R. Müller;
Zürich/CH
4. O51 - Simulating Muscle Weakness by Increasing Bodyweight: The Effect of Extra Load on the Sit-to-Stand Movement
J. Block, M. Vanoncini, S. Wolf;
Heidelberg/DE
5. O52 - Correspondence Between Knee Joint Angle and Moment after Seat Unloading in Sit-To-Stand
M. Vanoncini¹, J. Block², S. Wolf¹;
¹Heidelberg/DE, ²Heidelebrg/DE
6. O53 - Difference of the Motor Strategy between Sit-To-Walk And Gait-Initiation of Patients After Stroke
Y. Osada¹, S. Yamamoto², M. Fuchi¹, K. Onoyama¹, S. Ibayashi¹;
¹Onojo City/JP, ²Otawara City/JP

12:00–13:00 Lunch

Exhibition Area

13:00–14:30

Poster Area

Poster Session 2

Even poster numbers

- P02 Enhancement of Anticipatory Postural Control Following a Single Training Session
N. Kanekar, V. Krishnan, A. Aruin;
Chicago/L/US
- P04 Relationship between Sit-To-Stand (STS) Motion Characteristics and Walking Ability in Stroke Patients
N. Maeda¹, J. Kato¹, K. Itotani¹, K. Onishi¹, M. Murakami²;
¹Tatsuno/JP, ²Kobe City/JP
- P06 Interference of High-Heel Shoes in Static Balance among Young Women
S. Gerber¹, R. Costa¹, L. Grecco¹, H. Pasini¹, J. C. Corrêa¹, P. R. Lucareli¹, A. Salgado¹, C. Oliveira²;
¹São Paulo/BR, ²São Paulo - Sp/BR
- P08 The Relationship between Standing Posture and Hip Flexion in Young and Old Adults.
N. Motojima¹, S. Eun¹, S. Yamamoto²;
¹Izu/JP, ²Otawara City/JP
- P10 Upper Limb Functional Limitation Task in Adults with Dyskinetic Cerebral Palsy.
M. Artilheiro¹, W. Godoy¹, M. Galli², V. Cimolin², C. Oliveira³, J. C. Corrêa¹,
P. R. Lucareli¹;
¹São Paulo/BR, ²Milan/IT, ³São Paulo - Sp/BR
- P12 Biceps-Triceps Activation Ratio in Reach-to-grasp Tasks That Require Forearm Supination in Patients With Cerebral Palsy and Healthy Controls
M. de Bruin, M. Kreulen, M. Smeulders, H. Veeger, S. Bus;
Amsterdam/NL
- P14 Evaluation of Shoulder Mobility During Daily Activity Using Electromyography and Kinematic Data
C. Duc, C. Pichonnaz, J. Bassin, B. Jolles, A. Djahangiri, A. Farron, K. Aminian;
Lausanne/CH

- P16 Activity of Musculus Triceps Brachii within Posterior Platform Translation in Transtibial Amputees
B. Kolářová, M. Janura, Z. Svoboda, P. Kolář, L. Hylmarová;
Olomouc/CZ
- P18 Peroneus Longus and the Midfoot in Children: EMG Normative Data
C. Boulay, V. Pomeroy, E. Viehweger, G. Authier, E. Castanier, Y. Glard, B. Chabrol, J. Jouve, G. Bollini, M. Jacquemier;
Marseille/FR
- P20 Mixed-Reality Therapy for Adults with Cognitive Impairments
P. Heyn¹, B. Abreu², K. Ottenbacher², J. Carollo³;
¹ArvadaCO/US, ²GalvestonTX/US, ³Aurora/US
- P22 Lower Extremity Kinematics and EMG in Multi-Moment Follow-Up Study during ACL Rehabilitation Program.
C. Baten, R. Schoot Uiterkamp, R. Wassink;
Enschede/NL
- P24 The Use of Goal Attainment Scores to Evaluate the Effect of Repeated BTX-A Treatments in Children With Cerebral Palsy
K. Fagard¹, K. Desloovere², P. Van de Walle¹, G. Molenaers¹;
¹Pellenberg/BE, ²Leuven/BE
- P26 Pedobarographic Results after Operative Clubfoot Correction
S. Lebek, M. Panian, N. Gutteck, D. Wohlrab;
Halle/DE
- P28 The Effect of an Ankle-Foot Orthosis with Dorsiflexion-Stop on Gait Analysis Parameters, Energy Expenditure, and Patient Satisfaction in Former Polio Patients with Plantar Flexor Weakness
S. Bus, H. Ploeger, M. Siebrecht, C. van Schie, M. Brehm, F. Nollet;
Amsterdam/NL
- P30 Powered Prosthetic Knee for Trans-Femoral Amputees, a Case Report.
D. Heitzmann, M. Alimusaj, S. Wolf;
Heidelberg/DE
- P32 Does Rider Influence Horse's Movement in Hippotherapy?
M. Janura, Z. Svoboda, T. Dvorakova;
Olomouc/CZ

- P34 Accessible Gait Analysis
A. Murphy, P. Rowe, R. Bowers, C. Meadows;
Glasgow/UK
- P36 The Use of an Off-The-Shelf Gaming Technology for Tracking Movement and Upper Limb Stroke Rehabilitation
J. Hijmans¹, M. King²;
¹*Groningen/NL*, ²*Christchurch/NZ*
- P40 A New Lower Limb Model for Motion Analysis and its Comparison With Vicon® Plug-in-Gait model
M. MuGhaffar, R. Abboud, W. Wang;
Dundee/UK
- P42 Pathological Gait Characterization via Moment-Angle Relationship: a New Decomposition Method
R. Wang, E. Broström, E. Gutierrez-Farewik;
Stockholm/SE
- P44 Double Calibration for a Helen Hayes Marker Set
H. Davies¹, P. Davenport¹, D. Pratt¹, M. Hughes²;
¹*Birmingham/UK*, ²*Guildford/UK*
- P46 A Study To Investigate The Reliability Of Computerised Analysis Of Human Gait Using Vicon Motion Analysis System
D. Meldrum¹, C. Shouldice¹, K. Jones², M. Forward²;
¹*Dublin/IE*, ²*Ghent/BE*
- P48 Unicondylar Surface Replacement and Knee Interpositional Spacer in Gonarthrosis Patients—Evaluation of One Leg Stance in Mid Term Follow up with Biodex Balance System
S. Dullien, M. Baeurle, F. Koeck, J. Beckmann, J. Grifka, J. Goetz;
Bad Abbach/DE
- P50 Comparison of Skill Difficulty for Typically Developing Children and Children with Gait Impairment Using the Gillette Functional Assessment Questionnaire
J. Stout¹, G. Gorton², R. Tervo³, T. Novacheck¹;
¹*St. Paul/MN/US*, ²*Springfield/US*, ³*St. Paul/US*

- P52 The Movement Analysis Profile and Gait Profile Score in Patients With Parkinson's Disease During Dual Task.
D. Speciali¹, E. Oliveira², F. Pereira², C. Oliveira³, J. C. Corrêa¹,
P. R. Lucareli¹;
¹São Paulo/BR, ²Sao Paulo/BR, ³São Paulo - Sp/BR
- P54 Activity of Musculus Triceps Brachii Within Posterior Platform Translation in Healthy Subjects
B. Kolářová, M. Janura, P. Kolář, Z. Svoboda, L. Hylmarová;
Olomouc/CZ
- P56 Rectus Femoris Spasticity in Patients with Cerebral Palsy
D. Metaxiotis, V. Kouvelioti, C. Milonas, A. Kiriakidis; *Thessaloniki/GR*
- P58 The Relation between Gait Stability and Economy in Hemiparetic Gait.
H. Houdijk¹, Y. Kerkum¹, L. Droog¹, D. Rijntjes², M. Tolsma²;
¹Amsterdam/NL, ²Wijk Aan Zee/NL
- P60 Armswing during Walking in Persons with Stroke: a Pilot Study
G. Johansson¹, J. Selling¹, E. Broström², C. Häger¹;
¹Umeå/SE, ²Stockholm/SE
- P62 Changes in Gait Kinematics and Kinetics Associated with Structural Joint Degeneration in Knee Osteoarthritis
I. Baert¹, I. Jonkers¹, F. Staes¹, F. Luyten², S. Truijen³, S. Verweijen²,
S. Verschueren²;
¹Heverlee/BE, ²Leuven/BE, ³Antwerpen/BE
- P64 The Relation Between Passive Ankle Dorsiflexion and Ankle and Knee Joint Angles During Barefoot Gait in Children with Spastic Cerebral Palsy
J. Maas, A. Dallmeijer, J. Harlaar, P. Huijing, R. Jaspers, J. Becher;
Amsterdam/NL
- P66 Gait Modifications to Unload the Hip in Children with Legg-Calve-Perthes Disease
T. Kraus, M. Švehlík, G. Steinwender, W. Linhart, E. Zwick;
Graz/AT

- P68 Step Width of Six-Year-Old Children with Relation to Chosen Features of Their Body Build
E. Pretkiewicz-Abacjew,
Gdansk/PL
- P70 Outcomes Using Ambulatory Ankle Foot Orthoses in Duchenne Muscular Dystrophy
W. Bromwich¹, M. James², C. Stewart², N. Emery², R. Quinlivan³;
¹Shropshire/UK, ²Oswestry/UK, ³London/UK
- P72 Intersite Discrepancies in Correlations among Gillette Gait Index Variables
D. Gómez-Andrés¹, I. Pulido Valdeolivas¹, J. López-López², I. Rodríguez¹, J. Martín¹, E. Rausell¹;
¹Madrid/ES, ²San Sebastian De Los Reyes/ES
- P74 Interaction between Walking Speed and Spasticity in children with Spastic Gastrocnemius
C. Huenaeerts¹, L. Bar-On¹, K. Fagard¹, A. Van Campenhout¹, G. Molenaers¹, K. Desloovere²;
¹Pellenberg/BE, ²Leuven/BE
- P76 A Marker Based Kinematic Method of Identifying Initial Contact during Gait for Use in Real-Time Visual Feedback Applications.
A. De Asha¹, M. Robinson², G. Barton²;
¹Bradford/UK, ²Liverpool/UK
- P78 The Estimation of Muscle Fatigue During Running at Different Intensities
A. Mastalerz,
Biala Podlaska/PL
- P80 Movement Variability in Virtual-Reality Welding
R. Rein, B. Feodoroff, B. Biallas, C. Wilke;
Cologne/DE

14:30–15:20

Großer Festsaal

Session 7 - Upper Extremity II

Chairmen: J. Harlaar, C. Doorenbosch

1. O54 - Upper Limb Movement Pathology in Children with Unilateral CP:
The Arm Profile Score
E. Jaspers¹, H. Feys¹, H. Bruyninckx¹, K. Klingels¹, G. Molenaers²,
K. Desloovere¹;
¹Leuven/BE, ²Pellenberg/BE
2. O55 - Inter-Girdle Coordination while Locomotion under Constraints
P. Dedieu, P. Zanone;
Toulouse/FR
3. O56 - Reverse Shoulder Prosthesis - Markerbased Measurement of the Center
of Rotation Localisation
O. Rettig, M. Maier;
Heidelberg/DE
- O57 Cancelled
4. O58 - Upper Limb Movement Characteristics in Children with Unilateral
Cerebral Palsy
E. Jaspers¹, K. Desloovere¹, K. Klingels¹, H. Bruyninckx¹, G. Molenaers²,
H. Feys¹;
¹Leuven/BE, ²Pellenberg/BE
5. O59 - A Protocol to analyze 3D Scapulo-Humeral Motion in Children
M. Lempereur¹, S. Brochard², O. Rémy-Néris²;
¹Brest Cedex/FR, ²Brest/FR

14:30–15:30

HS 33

Session 7b - Foot Kinematics

Chairmen: E. Viehweger, A. Leardini

1. O60 - Correlation between the Oxford Foot Model Kinematics and the Oxford
Ankle Foot Questionnaire
J. Bates¹, J. Stebbins¹, J. McCahill¹, T. Theologis¹, C. Morris²;
¹Oxford/UK, ²Exeter/UK

2. O61 - Contribution of Multisegment 3d Foot Kinematics, Kinetics and Emg Data to the Assessment of Diabetes Subjects' Lower Limb Impairments
Z. Sawacha, F. Spolaor, A. Guiotto, G. Guarneri, M. Negretto, A. Munari, R. Ferrari, A. Venturin, A. Avogaro, C. Cobelli;
Padova/IT
3. O62 - Relationship between Motion of the Hallux and the Foot in Cerebral Palsy
J. Stebbins, T. Theologis;
Oxford/UK
4. O63 - The Comparison of Patellofemoral Joint Forces Between Flat Footed and Normal Subjects During Stance Phase of Gait
M. Razeghi, S. Ebrahimi, F. Yazdani;
Shiraz/IR
5. O64 - Characterisation of Pes Planovalgus by Patients with Juvenile Idiopathic Arthritis with the Oxford Foot Model
J. Merker¹, M. Hartmann², F. Kreuzpointner³, M. Spamer², R. Haefner², J. Haas², A. Schwirtz³;
¹München/DE, ²Garmisch-Partenkirchen/DE, ³Munich/DE
6. O65 - A Comparative Evaluation of the Effect of Three Different In-Shoe Orthotic Appliances on the Force Applied to the Knee Extensor Mechanism in Flat Footed Subjects During Stance Phase of Gait
M. Razeghi, F. Yazdani, S. Ebrahimi, A. Ghanbari;
Shiraz/IR

15:30–16:00 Coffee Break

Exhibition Area

16:00–17:00

Großer Festsaal

Session 8 - Technical Development

Chairmen: B. Müller, M. Syczewska

1. O66 - Transforming Gait Curves Recorded at One Walking Speed to Simulate Gait Curves at Different Walking Speeds Using Functional Principal Component Analysis
J. Røislien¹, T. Goihl², A. Opheim³;
¹Oslo/NO, ²Trondheim/NO, ³Nesoddtangen/NO

2. O67 - Persistent and Anti-Persistent Pattern in Stride-To-Stride Variability of Treadmill Walking: Influence of Rhythmic Auditory Cueing
P. Terrier, O. Dériaz;
Sion/CH

O68 – cancelled
3. O69 - Technical Validation of a New Movement Therapy System for Treatment of Low Back Pain.
C. Bauer¹, L. Baumgartner², S. Schellendorfer¹, M. Ernst¹, M. Lawrence²;
¹Winterthur/CH, ²Zurich/CH
4. O70 - A Comparison of Regression Techniques to Control for Gait Speed
P. Dixon, H. Böhm;
Aschau Im Chiemgau/DE
5. O71 - Robot-Assisted Reaching Against Gravity: EMG Activity, Movement Perception and Biomechanics
M. Caimmi¹, M. Malosio², N. Pedrocchi², F. Vicentini², L. Molinari Tosatti², F. Molteni³;
¹Costa Masnaga (Ic)/IT, ²Milano/IT, ³Costamasnaga (Ic)/IT
6. O71A - Gait Parameter Set for Gillette Gait Index Depends on Disorder - Optimization of Data Set Choice with Data Mining Algorithms
M. Syczewska, K. Kocel, P. Wasiewicz;
Warszawa/PL

16:00–17:00

HS 33

Session 8b - Deviation Indexes/ Reliability

Chairmen: G. Barton, J. Buurke

1. O72 - The Reliability of Three-Dimensional Gait Kinematics in Healthy Children
I. Skaaret¹, M. Fosdahl², A. B. Huse², K. Beyer², J. Roislien²;
¹Strommen/NO, ²Oslo/NO
2. O73 - Inter-laboratory Consistency of Gait Analysis Measurements
M. G. Benedetti, A. Merlo, M. Boschi, A. Leardini;
Bologna/IT

3. O74 - Effects of Age and Walking Speed on Long-Range Autocorrelations and on Fluctuation Magnitude of Stride Duration
B. Bollens¹, C. Detrembleur¹, F. Crevecœur², T. Lejeune¹;
¹Brussels/BE, ²Kingston/CA
4. O75 - Are Stability Issues a Potential Cause for Adaptations in Split Belt Walking?
S. Bruijn, J. Duysens, S. Swinnen;
Leuven/BE
5. O76 - Asymmetry vs. Deviation Plot: A New Gait Analysis Data Reduction Tool.
N. Darras¹, D. Pasparakis², M. Tziomaki², C. Nestoridis², M. Pentarakis²;
¹Pagрати/GR, ²Athens/GR
6. O77 - Adjustment of the Thigh Rotation Offset Results in Reduced Variability in the Hip Rotation Curve
M. Malt¹, J. Fevang², A. Aarli², A. M. Mandujano², K. Jansen²;
¹Strusshamn/NO, ²Bergen/NO

SATURDAY, SEPTEMBER 17, 2011

09:00–10:20

Großer Festsaal

Session 9 - Clinical Outcome II

Chairmen: K. Desloovere, S. Gibbs

1. O78 - Effect of Climbing Therapy on Gait Performance in Children with Cerebral Palsy
H. Böhm¹, M. Rammelmayer², L. Döderlein¹, F. Stief³;
¹Aschau Im Chiemgau/DE, ²Munich/DE, ³Frankfurt Am Main/DE
2. O79 - Gait Deviations in Patients with Longterm Follow-Up after Legg-Calvé-Perthes Disease
B. Westhoff, C. Zilkens, A. Müller-Reinartz, D. Rosenthal, R. Krauspe;
Duesseldorf/DE
3. O80 - Three-Dimensional Gait Analysis in Cervical Spondylotic Myelopathy: Comparison with Age- and Gender-Matched Healthy Controls.
A. Malone, D. Meldrum, C. Bolger;
Dublin/IE
4. O81 - Single Event Multilevel Surgery in Children with Spastic Cerebral Palsy: 5 Year Follow Up of a RCT Cohort.
P. Thomason¹, P. Selber¹, H. Graham²;
¹ParkvilleVIC/AU, ²Parkville/AU
5. O82 - Long-Term Outcome of Femoral Derotation Osteotomy in Spastic Diplegia
T. Dreher, B. Swartman, S. Wolf, J. Korber, W. Schuster, P. Armbrust, F. Braatz;
Heidelberg/DE
6. O83 - The Timing of Single-Event Multilevel Surgery in Children with Cerebral Palsy Walking with Flexed Knee Gait
M. Švehlík¹, T. Kraus¹, G. Steinwender¹, T. Lehmann², W. Linhart¹, E. Zwick¹;
¹Graz/AT, ²Jena/DE
7. O84 - The Impact of the Patellar Tendon Shortening at Crouch Knee Gait in Patients with Cerebral Palsy
D. Neves, M. C. Filho, C. Kawuamura, B. Silva, A. Zucon;
São Paulo/BR

8. O85 - The Effects of Ankle Taping on the Kinematics Findings of the Ankle and Knee Joints during Walking on Level Ground.
E. Shoara, A. Rahimi, M. Razeghi, S. Ebrahimi;
Shiraz/IR

10:20–10:50 Coffee Break

Exhibition Area

10:50–11:20

Großer Festsaal

Keynote Lecture

Motion analysis in animals

C. Peham, *Vienna/AT*



Curriculum vitae of Dr. Christian Peham

Date of birth: October 9th, 1962, in Melk/Austria

Graduate from the University of Technology Vienna:

Degree in Communication Engineering (Diplomingenieur), 1991

Master degree in Mechanical Engineering (Doctor technicæ), 1994

Scientific Career:

Assistant at the Clinic for Orthopaedics in Ungulates, University of Veterinary Medicine Vienna, 1991

Assistant professor at the Clinic for Orthopaedics in Ungulates, University of Veterinary Medicine
Vienna , 2001

Associate professor for Biomechanics at University
of Veterinary Medicine
Vienna,2001

Scientific activity - Publications:

THESIS:

- 1) C. PEHAM (1994)

Bewertung der Bewegungssymmetrie von Pferden im Trab mit Hilfe der Spektralanalyse. Dissertation an der Technischen Universität Wien, April 1994

LAST PAPERS IN PEER REVIEWED JOURNALS:

- 2) GROESEL M; GFOEHLER M; PEHAM C. (2009) Alternative solution of virtual biomodeling based on CT-scans. J Biomech. 42(12):2006-9.
- 3) ZANEB, H; KAUFMANN, V; STANEK C; PEHAM C; LICKA, T.F. (2009) Quantitative differences in activities of back and pelvic limb muscles during walking and trotting between chronically lame and nonlame horses. Am J Vet Res. Sep;70(9):1129-34.
- 4) PAGGER, H; SCHMIDBURG, I; PEHAM C; LICKA, T.F. (2009) Determination of the stiffness of the equine cervical spine. Vet. J. Oct 20. [Epub ahead of print]
- 5) KOTSCHWAR, A.B., BALTACIS, A., PEHAM, C. (2010) The influence of different saddle pads on force and pressure changes beneath saddles with excessively wide trees. Vet. J. (184) 322-325.
- 6) KOTSCHWAR, A.B., BALTACIS, A., PEHAM, C. (2010) The effect of different saddle pads on forces and pressure distribution beneath a fitting saddle. Equine vet. J. (42) 114-118.
- 7) PEHAM, C., KOTSCHWAR, A.B. (2010) A comparison of forces acting on the horse's back and the stability of the rider's seat in different position at the trot Vet. J. (184) 56-59.

Habilitation:

- 8) C. PEHAM (2001) Methoden und klinische Anwendungen der Bewegungsanalyse des Pferdes unter besonderer Berücksichtigung der Lahmheit, an der Veterinärmedizinischen Universität Wien zur Erlangung der Lehrbefugnis für Biomechanik, März 2001.

Research Interests

- Equine biomechanics
- Sports biomechanics
- Rider-horse interaction
- Modeling of the equine spine

Current Research

- Modeling and dynamic simulation of the equine back and neck
(with Theresia Licka, Martin Groesel, Rebeka R. Zsoldos)
- Effects of weight to toelt of islandic horses
(with Theresia Licka, Bettina Rumpler, Andrea Riha)
- Biomechanic analysis of Handballplayers (with Matthias Lindner)

Abstract

Integration of motion analysis into the clinical routine is the main goal of the Movement Science Group (Clinical Department for Companion Animals and Horses, University of Veterinary Medicine Vienna). The diagnosis in veterinary medicine is challenging due to communication difficulties with the animals compared to human medicine. One of the first steps in veterinary orthopaedic diagnosis is to identify the painful (lame) limb. Part of the assessment is gait analysis. The clinicians evaluate motion asymmetries, such as head nodding (forelimb lameness) and motion asymmetry of the tuber coxae (pelvis) (hindlimb lameness). Clinical orthopaedic evaluation includes several tests, such as flexion test and nerve blocking. In addition to clinical examination, several diagnostic methods (e.g. scintigraphy, radiography and ultrasonography) have been used, but in some areas (such as the vertebral column in the horse) investigation of functional deficits in vivo remains unrewarding. Diagnostic imaging is very limited (MRI and CT are impossible) in horses due to their size. For dogs, diagnosis is easier because all methods of medical imaging are available.

Motion analysis has relevance as a clinical tool, as it allows biomechanical evaluation of sound and lame animals. Motion analysis facilities available at the MSG are a treadmill with ten high-speed camera system, electromyography, accelerometers and pressure measurement pad. All these data are potential inputs for dynamic simulation of a musculoskeletal model. In clinical routine motion analysis is rarely used, however, there is an application in lameness evaluation e. g. the pharmaceutical industry efficacy testing of supplements. In the future, it is anticipated that motion analysis becomes an integrated tool in veterinary orthopaedics to quantify and evaluate the pre and post therapy conditions. Furthermore, the inter-individual variability and individual kinematic data of each animal are necessary to allow an interpretation of the movement pattern and assist clinicians in diagnosis and therapy. Through the improvement of methods, especially biomechanical simulation based on real data, motion analysis can potentially assist the veterinarians as important clinical tool in future.

11:20–12:20

Großer Festsaal

Session 10 - Scorse/ EMG

Chairmen: R. Baker, A. Rozumalski

1. O86 - A Method to Reference the Gait Deviation Index to a Speed-Matched Control
A. Rozumalski, M. Schwartz;
St PaulMN/US
2. O87 - Gait Deviation Index and Gross Motor Function in Children with Cerebral Palsy
A. Massaad¹, A. Assi¹, M. Schwartz², W. Skalli³, I. Ghanem¹;
¹Beirut/LB, ²St PaulMN/US, ³Paris/FR
- O88 – moved to Session 5
3. O89 - Gait Deviation Index – a Suitable Measurement of Gait Deviations in Patients with Knee and Hip Osteoarthritis
J. Naili¹, A. Esbjörnsson¹, A. Rozumalski², M. Schwartz², M. Reimeringer¹, E. Broström¹;
¹Stockholm/SE, ²St PaulMN/US
4. O90 - Median EMG Frequency Quantifies Muscle Weakness During Gait in Children With Cerebral Palsy.
L. Van Gestel¹, H. Wambacq¹, H. Bruyninckx², P. De Cock², K. Desloovere²;
¹Heverlee/BE, ²Leuven/BE
5. O91 - Reliability of Surface Electromyography Timing Parameters in Gait in Cervical Spondylotic Myelopathy
A. Malone, D. Meldrum, J. Gleeson, C. Bolger;
Dublin/IE
6. O92 - Kinematics and EMG Activity Associated with Perturbed Gait in Children with Cerebral Palsy
M. Petrarca¹, A. Colazza¹, S. Carniel¹, F. Patanè¹, E. Castelli¹, P. Cappa²;
¹Palidoro/IT, ²Rome/IT

12:20–13:00

Großer Festsaal

Best Poster Award

Closing of the conference

A. Kranzl, Vienna/AT

INDEX OF AUTHORS

Abstract Author	List	Abstract Author	List
Aarli A.	O77	Bernal M.	P23
Abboud R.	P40	Beyaert C.	O11
Abreu B.C.	P20	Beyer K.K.	O72
Aertbeliën E.	O45,P57	Biallas B.	P80
Ahn S.	P29,P49	Billon-Grumillier C.	O11
Aichner F.T.	P09	Block J.	O52,O51
Akalan N.E.	O19	Blondel B.	O48
Alimusaj M.	O14,P30	Blumentritt S.	O08
Aminian K.	O04,P11,P14	Bolger C.	O80,O91
Ananjeva T.	P55	Bollens B.	O74
Araujo M.C.	P01	Bollini G.	P18,O48
Arendzen J.H.	O46	Bomfim C.L.A.	P03
Armand S.	O18	Bonikowski M.	P07,P27
Armbrust P.	O82	Boschi M.	O73
Artilheiro M.C.	P10	Bosmans L.	O31
Aruin A.S.	P02	Bouchakour D.	O33
Assi A.	O87	Bowers R.J.	P34
Attwenger B.	O01	Braatz F.	O03,O10,O14,O82
Authier G.	P18	Brand A.	O30
Avogaro A.	O61	Brehm M.A.	P28
Boulay C.	P18	Brochard S.	O59
Baert I.A.C.	P62	Bromwich W.	P70
Baeurle M.	P48	Broström E.	O24,O38,P42,O89
Baker R.	O09,O21	Broström E.W.	O32,P60,O88
Bar-On L.	O45,P74,P57	Bruijn S.M.	O42,O75,P25
Barcala L.	P01	Bruinink L.	P75
Barlow D.	O17	Brunner	R.O07,O16,O21,P47
Barton G.J.	P39,P76	Bruyninckx H.	O45,O54,P57,O58,O90
Bassin J.-P.	O04,P14	Bus S.A.	P12,P28
Baten C.T.M.	P22	Buurke J.	O28
Bates J.	O49,O60,O05	Buzutti I.P.M.S.	P03
Bauer C.	O69	Bénard M.	P53
Baumgartner L.	O69	Böhm H.	O30,O70,O78
Becher J.	P53,P64	Carraro E.	P19
Beckmann J.	P48	Caimmi M.	O71,P59
Bell M.	O43	Callewaert B.	O15,P71
Bellemans J.	O15,P71	Camathias C.	O07
Bellmann M.	O08	Cappa P.	O92
Benedetti M.G.	O73	Carniel S.	O92

Abstract Author	List	Abstract Author	List
Carollo J.	O47,P20	Desloovere K.	P24,O42,O54,P57,O58,P71
Castanier E.	P18		,P74,O90,O45
Castelli E.	O92	Detrembleur C.	O74
Castro M.P.	O25	Dickens W.	O43
Cattin P.C.	P47	Dixon P.C.	O70
Ceseracciu E.	P43	Djhangiri A.	O04,P14
Chabrol B.	P18	Dodds A.	O17
Chang F.	O47	Donath S.	O09
Cimolin V.	P10	Doorenbosch C.	P15,P17
Claudon B.	O11	Dreher T.	O10,O82
Cobelli C.	P43,O61	Droog L.	P58
Colazza A.	O92	Duc C.	O04,P11,P14
Colella F.	P01	Dullien S.	P61,P48
Coleman S.	O20,O23	Dumas R.	O48
Collett J.	O68	Duysens J.	O34,O42,O75
Corrêa J.C.F.	P05,P06,P10,P52	Dvorakova T.	P32
Cortesi M.	P43	Dériaz O.	O67
Costa R.V.	P03,P06	Döderlein L.	O30,O78
Crevecoeur F.	O74	Ebrahimi S.	O63,O85,O65
Csepan R.J.	P33	Eichhorn H.-J.	P61
Daffertshofer A.	O27	Elovic, MD E.P.	O40
Dallmeijer A.	P17,P64	Emery N.	P70
Dan B.	P57	Ernst M.	O69
Darras N.G.	O76	Esbjörnsson A.-C.	O89,O88
Davenport P.J.	P44	Esser P.	O68
Davies H.R.	P44	Eun S.S.	P08
Dawes H.	O68	Fradet L.	P77
De Asha A.R.	P39,P76	Fagard K.	P74,P24
De Bruin M.	P12	Fantozzi S.	P43
De Cock P.	O90	Farron A.	O04,P14
De Coulon G.	O18	Fehske K.	P61
De Gooijer-van de Groep K.L.	O46	Feltham M.	O68
De Groot J.H.	O46	Feodoroff B.	P80
De Groote F.	O34	Ferrari R.	O61
De Haan A.	O36,O41	Fevang J.M.	O77
De Vlucht E.	O46	Feys H.	O54,O58
Dedieu P.	O55	Filho M.C.M.	O84
Delgado S.	P73	Forward M.	P46
Deng H.-R.	O57	Fosdahl M.A.	O72
Desailly E.	O33	Franz A.	O15

Abstract Author	List	Abstract Author	List
Freslier M.	O16	Hartmann M.	O13,O64,P65
Fuchi M.	O53	Heitzmann D.W.W.	O14,P30
Gualdi S.	P19	Heyn P.C.	P20
Galli M.	P10	Hijmans J.M.	P36
Garbelotti Jr. S.A.	P23	Hoesl M.	P75
Gaston M.S.	O07,O16,O21	Holt C.	O17
Gatta G.	P43	Houdijk H.	P17,O36,P75,P58
Geijtenbeek T.	P39	Howells K.	O68
Gerber S.B.	P06	Hu H.	P25
Gerrits K.	O41	Huber C.	P47
Gföhler M.	O02,O35,P41	Huenaerts C.	O45,P57,P74
Ghanbari A.	O65	Hughes M.	P44
Ghanem I.	O87	Huijing P.	P53,P64
Gibbs S.	O22	Huse A.B.	O72
Girsch W.	O01	Hylmarová L.	P16,P54
Glard Y.	P18,O48	Häger C.	P60
Gleeson J.	O91	Ibayashi S.	O53
Godoy W.	P10,P23	Itotani K.	P04
Goetz J.	P48,P61	Iversen M.D.	O88
Goihl T.	O66	Jacquemier M.	P18
Gorbacova K.	P55	Jadrný J.	P21
Gormley J.	O39	Jakusonoka R.	P55
Gorton G.E.	P50	James M.	P70
Graham H.K.	O09,O81	Jang J.	P49
Grasl C.	P33	Jansen K.	O77,O34
Grecco L.A.C.	P05,P06	Janssen M.	P37
Greve J.M.D.	P23	Janssen T.W.	O41
Grifka J.	P48,P61	Janura M.	P16,P54,P67,P32
Groen B.E.	P37	Jaspers E.	O54,O58
Guarneri G.	O61	Jaspers R.	P53,P64
Guiotto A.	O61	Johansson G.	P60
Gutierrez-Farewik E.M.	P42,P45,O32	Jolles B.	O04,P14
Gutteck N.	P26	Jones K.	P46
Gzik M.	P81	Jonkers I.	O34,P62,O31
Gómez-Andrés D.	P72,P73	Jouve J.-L.	P18,O48
Haas J.-P.	O13,O64,P65	Jumtins A.	P55
Haefner R.	O13,O64,P65	Jurkojc J.	P81
Hainisch R.	O35	Kaelin A.	O18
Hareb F.	O33	Kaiser-Šrámková L.	P21
Harlaar J.	P15,O46,P64,P75,P53	Kaluzna A.	P67
Harmelink K.	O28	Kanekar N.	P02

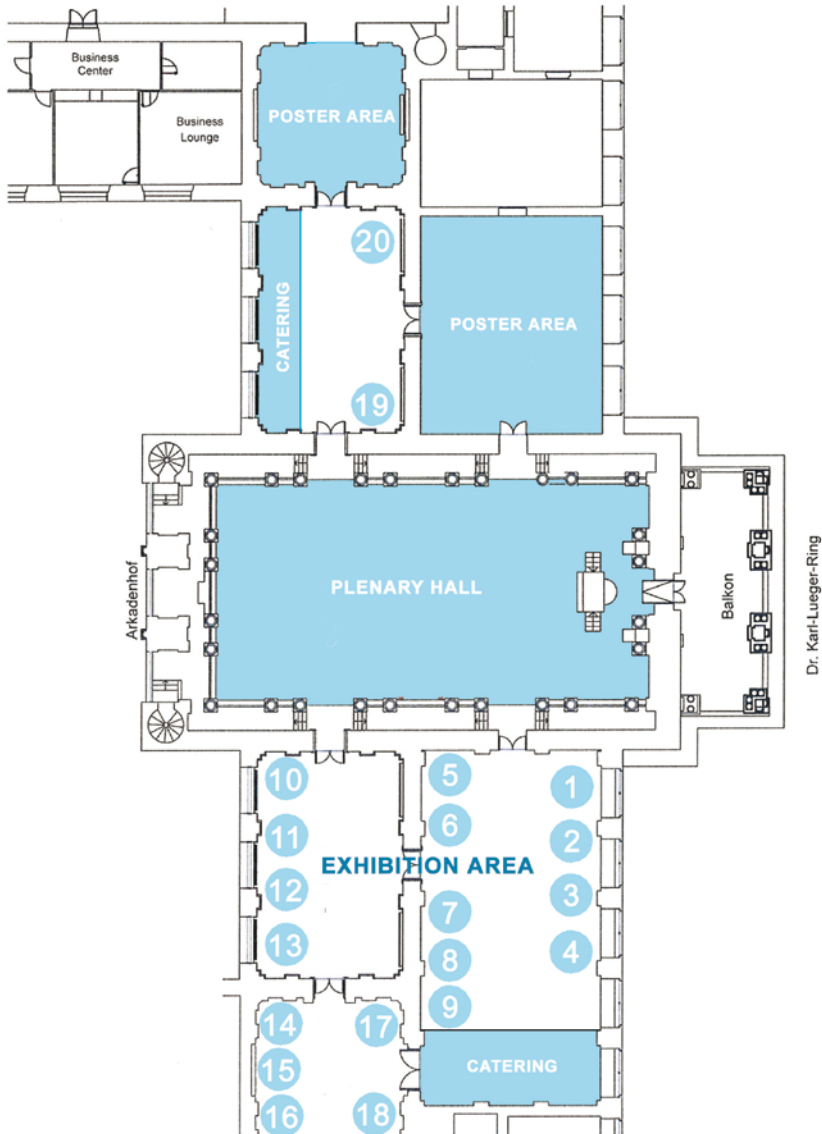
Abstract Author	List	Abstract Author	List
Kaptein R.	O27	Lejeune T.	O74
Karner C.	O01	Lempereur M.	O59
Karner J.	P41,O02	Lenaerts G.	O31
Kato J.	P04,P51	Lenz P.	P61
Kawuamura C.	O84	Lin X.	P25
Kerkum Y.	P58	Linhart W.E.	P66,O83
Ketzer G.	O01	Lucareli P.	P01
Khoury N.	O33	Lucareli P.R.G.	P03,P05,P06,P10,P23,P52
Kim C.S.	P29,P49	Ludwigs E.	O08
Kim S.H.	P29	Lundh D.	O20,O23
King M.	P36	Luyten F.P.	P62
Kiriakidis A.	P56	López-López J.	P72,P73
Klets O.	O32	Marconi V.	P19
Klingels K.	O54,O58	Marin F.	P77
Kocel K.	O71A	Martinuzzi A.	P19
Koeck F.	P48	Maas J.	P64
Kolář P.	P16,P54	Machado L.	O25
Kolářová B.	P54,P16	Maeda N.	P51,P04
Korber J.	O10,O82	Maier M.	O56
Kost L.	O03	Maiwald C.	P63
Kouvelioti V.	P56	Malone A.	O80,O91
Kranzl A.	O01,P13,P33,O35	Malosio M.	P59,O71
Kraus T.	O83,P66	Malt M.A.	O77
Krauspe R.	O12,O79	Mandujano A.M.	O77
Krebs A.	P31	Mantoan A.	P43
Kreulen M.	P12	Martín J.A.	P72,P73
Kreuzpointner F.	O64,O13,P65	Massaad A.	O87
Krishnan V.	P02	Mastalerz A.	P78
Kuchimov S.	O19	McCahill J.	O60
Labey L.	O15	Meadows C.B.	P34, O22
Lacouture P.	O33	Meijer O.G.	P25
Lambrechts K.	O45,P57	Meldrum D.	O80,O91,P46
Lange J.S.	P63	Mendes E.	O25
Langius-Eklöf A.	O38	Merker J.	O64
Lawrence M.	O69	Merlo A.	O73
Leardini A.	P71,O73	Meskers C.G.M.	O46
Lebek S.	P26	Metaxiotis D.	P56
Leffler J.	O15	Metcalfe A.	O17
Lehmann T.	O83	Meyns P.	O42
Leitch J.	O29	Michnik R.	P81
Lejeune L.	O33	Miehle K.	P63

Abstract Author	List	Abstract Author	List
Milani T.L.	P63	Panian M.	P26
Milonas C.-A.	P56	Park S.	P29,P49
Modlesky C.	O24	Pasini H.	P06
Molenaers G.	P24,O45,O54,P57,O58,P74	Pasparakis D.	O76
Molinari Tosatti L.	P59,O71	Patanè F.	O92
Molteni F.	P59,O71	Pavare Z.	P55
Morelli J.G.D.S.	P03	Paysant J.	O11
Morris C.	O60	Pedrocchi N.	P59,O71
Morán F.	P73	Pentarakis M.	O76
Motojima N.	P08	Pereira F.	P52
Mrozek P.	P27	Petrarca M.	O92
MuGhaffar M.	P40	Pichonnaz C.	O04,P14
Munari A.	O61	Pickering P.	P35
Murakami M.	P04,P51	Planté-Bordeneuve T.	O15
Murer K.	O50	Ploeger H.E.	P28
Murphy A.J.	P34	Pollice A.	P17
Müller B.	P35	Pomero V.	P18,O48
Müller R.M.	O50	Portnoy S.	P79
Müller-Reinartz A.	O79	Postans N.	O17
Naili J.	O89	Poul J.	P21
Nederhand M.	O28,O37	Poussel M.	O11
Negretto M.	O61	Pratt D.	P44
Nene A.	O28	Pratt E.	O06,O43
Nestoridis C.	O76	Pretkiewicz-Abacjew E.	P68
Neves D.L.	O84	Prinsen E.	O37
Nienhuis B.	P37	Pulido Valdeolivas I.	P72,P73
Niiler T.	O26	Quinlivan R.	P70
Nolan, PhD K.J.	O40	Rahimi A.	O85
Nollet F.	P28	Ramalho Jr. A.	P23
Novacheck T.F.	P50,P69	Rammelmayr M.	O78
Nowacka U.	P07	Rausell E.	P72,P73
Oliveira C.S.	P10,P52,P01,P03,P05,P06	Razeghi M.	O65,O85,O63
Oliveira E.M.	P52	Reeves M.	O06
Onishi K.	P04	Reichenfelser W.	O02,P41
Onoyama K.	O53	Reilly K.	O29
Opheim A.	O66	Reimeringer M.	O89
Osada Y.	O53	Rein R.	P80
Ottenbacher K.J.	P20	Rettig O.	O56
O'ihénart L.	P11	Riad J.	O20,O23,O26,O32,O24,O38
Pan Z.	O47	Ribeiro B.G.	P03,P05
Pandy M.	O35	Rietman H.	O28

Abstract Author	List	Abstract Author	List
Rietman J.	O37	Skalli W.	O87
Rijntjes D.	P58	Smeulders M.	P12
Roberts A.	O17	Soares D.	O25
Robinson M.A.	P39,P76	Sossai R.	O21,O07
Rodríguez I.	P72	Spamer M.	O64
Roislien J.	O72	Speciali D.S.	P52
Romkes J.	O16,P47	Spolaor F.	O61
Rosenthal D.	O79	Staes F.	P62
Rotaru I.	P09	Stebbins J.	O05,O60,O29,O49,O62
Rowe P.J.	P34	Steenbergen M.	P17
Rozumalski A.	O88,O89,O86,P69	Steinwender G.	P66,O83
Ruhe K.	O12	Stewart C.	O17,P70
Rutz E.	O07,O16,O09,O21	Stief F.	O30,O78
Rémy-Néris O.	O59	Stout J.L.	P50
Røislien J.	O66	Stumvoll M.	P63
Sagawa Y.	O18	Švehlik M.	P66,O83
Santin M.	P19	Svoboda B.	P13
Salgado A.	P01,P03,P05,P06	Svoboda Z.	P16,P32,P54,P67
Sardain P.	O33	Swartman B.	O82
Sawacha Z.	P43,O61	Swinen S.	O42,O75
Schellendorfer S.	O69	Syczewska M.	O71A
Scheys L.	O31,P71,O15	Trevisi E.	P19
Schmalz T.	O08	Tsenter J.	P79
Schoot Uiterkamp R.	P22	Temelli Y.	O19
Schuster W.	O82	Tenniglo M.J.	O28
Schwameder H.	P09	Terrier P.	O67
Schwartz I.	P79	Tervo R.C.	P50
Schwartz M.	P69,O86,O87,O88,O89,O44	Thawrani D.	P69
Schweizer K.	P47	Theologis T.	O05,O49,O62,O60
Schwirtz A.	O13,O64	Thomason P.J.	O81
Schärli A.M.	O50	Tirosh O.	O07,O09,O21
Selber P.	O81	Tolsma M.	P58
Selling J.	P60	Topakian R.	P09
Seo J.	P29,P49	Truijen S.	P62
Sheehan K.	O39	Tziomaki M.	O76
Shih Y.-F.	O57	Urbášek K.	P21
Shoara E.	O85	Valvano J.	O47
Shouldice C.	P46	Van Campenhout A.	O45,P74
Siebrecht M.A.N.	P28	Van Dieën J.H.	P25
Silva B.B.	O84	Van Gestel L.	O42,O90
Skaaret I.	O72	Van Nunen M.	O41

Abstract Author	List	Abstract Author	List
Van Schie C.H.M.	P28	Wezenberg D.	O36
Van Wijlen-Hempel M.S.	O46	Whatling G.	O17
Van de Langenberg R.	O50	Wielheesen D.H.M.	O46
Van de Walle P.	P24	Wilke C.	P80
Van der Heijden-Maessen H.C.M.	O46	Willemse A.A.M.	P15
Van der Meulen J.	O06	Williams S.	O22
Van der Woude L.H.V.	O36	Wohlrab D.	P26
Van der Zijden A.M.	P37	Wolf S.I. O10,O14,P30,O51,O52,O82,O03	
Vanoncini M.	O51,O52	Wolfsegger T.	P09
Veeger H.E.J.	P12	Wong P.	P71
Venturin A.	O61	Worster K.	O47
Verschueren S.M.P.	P62	Wretenberg P.	O88
Verweijen S.	P62	Wu W.	P25
Vicentini F.	P59,O71	Yamamoto S.	P08,O53
Viehweger E.	P18,O48	Yarossi, BS M.	O40
Wainwright A.	O49	Yazdani F.	O63,O65
Wambacq H.	O45,P57,O90	Yepremian D.	O33
Wang R.	P42,P45	Zeme S.	P19
Wang W.	P40	Zanone P.-G.	O55
Wasiewicz P.	O71A	Zavatsky A.	O29
Wassink R.G.V.	P22	Zilkens C.	O12,O79
Watelain E.	O18	Zubayer-Ui-Karim M.	O35
Weimann-Stahlschmidt K.	O12	Zucon A.	O84
Westhoff B.S.	O12,O79	Zwick E.B.	P66,O83

**EXHIBITION FLOOR PLAN
UNIVERSITY OF VIENNA, 1st FLOOR**



COMMERCIAL EXHIBITION

Exhibition Opening Hours

Thursday, September 15, 2011	10:30 – 19:00
Friday, September 16, 2011	09:00 – 17:00
Saturday, September 17, 2011	09:00 – 11:00

LIST OF EXHIBITORS

- 1 Vicon Motion Systems
- 2 Motek Medical
- 3 Xsens Technologies B.V.
- 4 AMTI
- 5 Zebris / Neurodata / Microgate
- 6 Noraxon / Bertec / Qualisys
- 7 Lion Systems
- 8 SIMI Reality Motion System GmbH
- 9 Novel
- 10 Rölke Pharma CIR Systems Inc.
- 11 Tekscan, Inc.
- 12 BTS Biomedical
- 13 ULTRAFLEX EUROPE BY DIRAME ORTHO
- 14 Delsys, Inc.
- 15 Contemplas
- 16 Codamotion
- 17 TMSI
- 18 Pohling-Tappe Orthopädietechnik
- 19 Kistler Instrumente AG
- 20 Biometrics Eur. BV

EXHIBITORS



AMTI has collaborated with top researchers to develop a wide range of force plates and instrumented biomechanics equipment. We offer many standard six-degree-of-freedom products and also regularly partner with individuals to create custom solutions for highly specialized applications. Our standard products include mounted force plates, portable force plates, instrumented treadmills, instrumented stairs, and instrumented walkers. We are also heavily involved in the field of biotribology, where our joint simulator machines are the industry standard for the evaluation of joint prosthetics.



Biometrics is a partner for the establishment of motion laboratories. Years of experience has become visible in proven products, solutions and support cases. Established and successfully active in an increasing number of clinics, hospitals and rehabilitation centres.



BTS BIOMEDICAL is BTS's new division committed to the development of technological solutions for the clinical environment that improve analysis, support diagnosis, and make therapy more effective. The goal is to provide doctors and specialists with powerful and easy to use instruments for functional assessment and rehabilitation able to diagnose many degenerative diseases sooner, improve therapy, and promote the recovery of patients disabled by trauma or stroke.

BTS BIOMEDICAL is made up of a team of engineers and medical practitioners committed to mining new clinical discoveries and technological advances and transforming them into effective and productive solutions for everyday clinical practice. Our goal is to use the accumulated clinical experience of recent years and those yet to come to benefit an increasingly large number of patients and medical practitioners.

We will provide medical practitioners with fully integrated, ready to use systems and access to training so they can make the best use of the instruments and mine the data they receive. We will provide ongoing technical support so that our solutions can become ever more useful.

BTS BIOMEDICAL has the ambitious mission of putting into practice the advances of past years so that trauma victims can regain their ability to move as much as possible and so that those with less severe problems can maintain their motor skills for longer and longer periods of their lives.



Company Brand Name: Codamotion

Company Name: Charnwood Dynamics Ltd.

Company Address: Unit 2 Victoria Mills, Fowke Street, Rothley Leicester LE7 7PJ

Country: UK

Website: www.codamotion.com

Telephone: +44(0)116 2301060

Fax: +44(0)116 230 1857

Email: info@codamotion.com

Company Profile:

Codamotion is the complete solution for real-time portable 3D movement measurement and analysis; manufactured and supported by Charnwood Dynamics Ltd. Portable and lab-based Codamotion systems can operate with a wide range of complimentary devices such as force plates and EMG systems. Established in 1988, Charnwood Dynamics prides itself on a reputation for strong technical support and working closely with the users of its products throughout the world. Applications include: clinical analysis, mobile gait labs, biomechanics, sports, orthotics & prosthetics, ergonomics, VR and visualization. We will introduce ODIN, our revolutionary new software suite for the CODA system, as well VALI, our video vector system, used for the assessment of patients using orthotics and prosthetics.



CONTEMPLAS GmbH, with its headquarter in Kempten/Germany, develops and distributes worldwide software solutions for gait, posture and general motion analysis in the medical and sports market.

The CONTEMPLAS motion analysis software **TEMPLO**

offers the possibility to do analysis in different fields of applications, as Clinical Gait Analysis, 2D/3D Posture Analysis, Running Analysis, etc.

With the **easy data acquisition and integration of other systems** in the analysis process, such as EMG and pressure/force measuring systems, TEMPLO becomes an essential tool for the clinical everyday practice.

User- friendliness and dedicated analysis protocols based on the integration of the latest video technology help you while performing your analyses.



About Delsys Inc.

Leading by experience & Technical Innovation in the wearable Sensors Applications: Primarily focusing on surface and decomposition electromyography (sEMG and dEMG™), Delsys has established itself as an inventive leader in EMG and other biosignal sensor solutions since 1993. Delsys continues to lead the innovation path by developing tools for neuromuscular research, rehabilitation and injury clinics, human performance enhancement, biofeedback applications, activity monitoring.

Current product line include: Desktop EMG solutions, wearable EMG and biosignal sensor solutions for lab and field research, biosensor solutions, and dEMG™ technology for motor control studies.

For more information, pls visit Delsys.com or email: delsys@delsys.com



measure. analyze. innovate.

Kistler force platforms were first introduced in 1969 and have consistently proved their worth as precise and reliable measuring instruments.

The unique piezoelectric measuring system offers numerous advantages and makes Kistler force platforms a cost effective investment for biomechanical laboratories. High accuracy, linearity and sensitivity provide reliable and reproducible results.

The new force platform type 9260AA6 is designed specifically for use in gait and balance analyses and has a built-in charge amplifier compatible with all of the common motion analysis systems. It is a reasonably priced and easy to mount multi-component force platform with excellent center of pressure (COP) accuracy and versatile installation options.

Kistler places a great deal of value on the exchange of know-how and close collaboration with leading research institutes, hospitals and sports performance centers worldwide. This is the only way of developing reliable measuring instruments that fully meet the most stringent requirements.

Kistler is therefore a founder member of the International Society of Biomechanics (ISB), whose activities it supports as principal sponsor.

Year after year Kistler invests 10 % of its sales in R&D to facilitate technically innovative yet cost-effective state of the art solutions.

www.kistler.com

LIONSYSTEMS

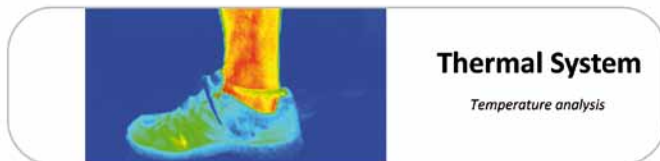


**Dynamic Foot
Scanner**



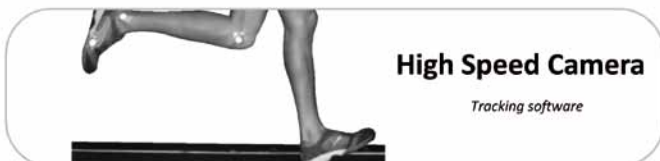
Minilab

Mobile gait analysis system



Thermal System

Temperature analysis



High Speed Camera

Tracking software



Low Cost Force Lab

Hardware and software

Lion Systems S.A.
ecostart 2
rue du commerce
L-3895 Foetz, Luxembourg

Tel : +352 263760 1
Fax: +352 261768 21
info@lionsystems.lu
www.lionsystems.lu

motek medical

improving human performance



Motek Medical provides innovative products for rehabilitation, orthopaedics, neurology, performance enhancements and research. Integrated virtual reality environments that combine motion platforms, instrumented treadmills, motion capture systems and surround sound, training movement functions and improving stability. Game elements and rich immersive interactions enable better user presence. The technology uses multi sensory real-time feedback and offline analysis tools.





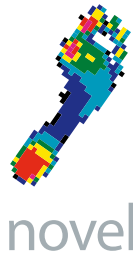
NORAXON INC. USA, located in Phoenix-AZ U.S.A. develops and manufactures high-end tethered and wireless state-of-the-art surface and fine-wire electromyography (EMG) equipment, mobile biomechanical & physiological sensors and comprehensive data analysis and acquisition software solutions for human movement labs, clinical gait analysis, sports medicine applications and ergonomic studies.



Bertec Corporation is a worldwide leading innovative manufacturer of force measuring instruments located in Columbus, Ohio USA. Our products are used extensively for research, rehabilitation and sports applications



Qualisys is a leading, global provider of products and services based on optical motion capture. The measurement systems consist of high speed, precision motion capture cameras and advanced software for tracking and analysis of motion data. Qualisys offers an end-user gait analysis product that can be used for clinical, as well as research studies. Users can choose to run standard protocols or develop their own methods and routines. All components, both hardware and software, are designed to give the user a complete package – from data capture to analysis.



novel was the first company in the world that developed a commercially available pedography® system. With more than 30 years of experience, novel is the leader in accurate and reliable pressure distribution measurement systems. Outstanding scientific software for the analysis of medical and industrial data allows the user to be always one step ahead.

novel gmbh, a Munich (Germany) firm specializing in dynamic pressure distribution measurement (DPDM) technology, was founded in 1978 by cyberneticist Peter Seitz. The company has developed three system families tailored to specific applications: pliance, pedar, and emed. The systems measure contact pressures between many surfaces, for example between a hand and tool, the buttocks and chair, a car door rubber seal and car door.

The pliance system was designed to work with soft surface applications. Primary areas of application for this system are measurements on aircraft and car seats, office chairs and wheelchairs. The system can be synchronized with other measuring instruments including motion capture systems.

The pedar system specializes in in-shoe measurement. The pedar mobile system enables testing of foot function during activities, aids in footwear design for improved comfort and injury prevention. The pedar system has also been used by orthopaedic shoemakers to assess design and fit of orthotics and shoes.

The emed system utilizes a sensor platform for barefoot DPDM. Currently it is being used in diabetic foot care clinics and pediatric orthopaedic medical centers. emed is often used to assess improvements made to feet during surgery.

For further information about the products and company please visit www.novel.de.



Our company, **Pohlrig & Tappe GmbH** is well known far beyond the borders of Austria for its professional orthopedic care of highly complex diseases.

We specialize in the care of children and adolescents. We provide dynamic orthosis for those with cerebral palsy, orthotics and prosthetics for congenital limb defects, myoelectric prosthetics for amputation of the upper extremity, and the production of innovative tools and components made __from silicone in our own laboratory.

Our international network of highly qualified and specialized technicians regularly attend conferences and training courses. We maintain close contact with high-ranking international physicians and therapists to ensure the best possible care at the cutting edge of technology.

Pohlrig & Tappe, Altmannsdorferstrasse 89 - 1120 Wien, www.pohlrigtappe.at



Das **GAITrite** Ganganalysesystem ist ein anerkanntes und weit verbreitetes Ganganalysesystem zur Bestimmung von zeitlichen und räumlichen Gangparametern. Das Standardsystem ist ein tragbarer, elektronisch gesteuerter Teppich, mit eingebauten Drucksensoren, die eine Serie aufeinander folgender Schritte erfassen können. Der Teppich wird mit einem Computer verbunden, der mit spezieller Anwendersoftware ausgestattet ist, welche die zeitlichen und räumlichen Gangparameter berechnet.



Simi from Unterschleißheim, Germany, provides video based 2D/3D motion analysis systems. Simi Motion is a full high speed video based system. The video based data make the system transparent, easy to understand and easy to use while providing high quality measurements for clinical analysis. Simi systems have an open hardware design with off the shelf hardware. This makes the systems very flexible and easy to configure. All kind of setups, from small 2D to extensive 3D systems are possible for all clinical use cases. Analogue data like EMG, force plates, pressure measurement or others can be synchronized and integrated.



Tekscan manufactures a broad range of pressure assessment and clinical/research evaluation tools. Our unique systems use thin, flexible, high-resolution pressure sensors to observe gait abnormalities, determine orthotic efficacy, identify potential ulceration areas, screen diabetic patients, and more. The F-Scan®, an in-shoe system, and the MatScan® a floor-based system, combine practical biomechanics with computer technology to revolutionize the diagnostic process, enhancing your ability to evaluate, substantiate and document your diagnosis.

Tekscan's Walkway™ captures multiple sequential footsteps for analysis of foot function and gait. The software calculates values for step and gait time, distance, velocity, and cadence. It also provides individual data for the left and right foot in regards to the gait cycle, step-stride parameters, and symmetry scores, as well as differential data between left and right feet.

The Walkway system is used clinically to make assessments and to determine treatment for pathomechanical and neuromuscular foot and gait affecting disorders (such as Cerebral Palsy, Multiple Sclerosis, Parkinsons, and Spasticity) as well as diabetes-related issues such as pressure sores and ulcers. In the research setting, the Walkway is used to investigate a treatment hypothesis for pathomechanical and neuromuscular foot and gait disorders, and to assess the efficiency of a proposed treatment.



TMSi is a company specializing in physiological measurement systems. The company provides hardware and interface solutions for all types of physiological measurement problems in routine medicine and in research environments. TMSi's unique amplifier technology ensures proper functioning even in the most adverse of circumstances (very noisy environments, ambulatory measurements on moving objects, poor electrode impedances etc). Signals are always measured and stored without any hardware filtering (True DC) to ensure total data integrity and optimal flexibility.

At ESMAC, TMSi will introduce its new package for Movement Analysis. This package is based on TMSi Polybench and can be completely tailored to the user's individual requirements. Please come and visit our stand for a in-depth demonstration of its many possibilities.



ULTRAFLEX® offers, a range of active dynamic isotonic orthotic components, to be used in custom to cast orthosis, which in neurological indications (f.e. **spasticity management** in CP) offer :

- muscles lengthening
- increase range of motion

decrease spasticity and in orthopaedic indications (f.e. amputations - orthopaedic procedures) provide :

- tendon lengthening,
- mobilization
- prevention of loss of motion (flexion or extension limitation)

Ultraflex® also offers a functional bracing line with Adjustable Dynamic Response (ADR-) orthotic components, also to be built inside custom to cast orthosis. After treatment with dynamic orthosis, but also in many frequent gait deviations conditions, they are often an universal choice for gait rehabilitation. Those ADR components come in adult & paediatric AFO's and adult knees, compensating orthotic intervention for each phase of the gait cycle. (CP, stroke, etc. ...)

Use logo to reach you separately for:
UltraflexEurope by Dirame

Ternat / Brussels / Belgium
Education, clinical support, supply
Europe – Middle East – Africa
www.dirame.com
www.ultraflexsystems.com
info@dirame.com
+32(0)2/582.82.50



Vicon delivers highly accurate 3D motion capture systems for use in gait analysis. Nearly 400 clinical gait labs world-wide use Vicon technology. Its flagship camera line, the Vicon T-Series, offers the highest resolution, frame rates and accuracy available, allowing detailed motion capture in almost any environment. Bonita is Vicon's next generation camera, combining size, power, and price performance into one amazing solution.

Vicon was established in Oxford, UK, in 1984 and is now a subsidiary of the Oxford Metrics Group Plc. Some of Vicon's global clients include: University of Vienna; Nuffield Orthopaedic Centre; University of Brussels; Northumbria University; Guy's and St Thomas' Hospital; Katholieke Universiteit Leuven; Amsterdam Medical Centre; and Humboldt Universitat zu Berlin. For more information please visit www.vicon.com.



Ambulatory motion analysis

Xsens' motion trackers, MTw kits, Xbus Kits and MVN BIOMECH motion capture systems are used for various purposes by researchers and product developers in Movement Science. The combination of high accuracy and ambulatory use are beneficial for use in biomechanics research, sports science, rehabilitation and ergonomics.

Xsens products:

MVN BIOMECH:

MVN BIOMECH is an ambulant, full-body, 3D human kinematic, camera-less measurement system. It is based on state-of-the-art MEMS inertial sensors, biomechanical models and sensor fusion algorithms. MVN BIOMECH is ambulatory, can be used indoors and outdoors regardless of lighting conditions.

MTw:

The MTw™ is a highly accurate, completely wireless, small and lightweight 3D motion tracker. It provides drift-free 3D orientation, acceleration, angular velocity, earth-magnetic field as well as static pressure. A wireless body area network of up to 32 MTw's is possible, while maintaining time-synchronisation better than 10 µs between each MTw.



zebris Medical GmbH as a technology venture provides expertise, longtime experience and continuous innovations in developing, producing and marketing of measuring systems for the biomechanics sector. As one of the leading suppliers of professional measuring systems for 3D movement analysis and force distribution measurement zebris can reflect upon more than 20 years of a success story.

Meanwhile more than 5.000 measuring systems world-wide have been supplied for application in science and everyday clinical use.



Neurodata's keywords are neurodiagnostics – gait – posture.

We are the quantification people in Austria.

More than 20 years experience with longtime partners as Noraxon – Zebris – micromed – Tetrax – Microgate is our background.

Individual service and adaptation capability is our strength.

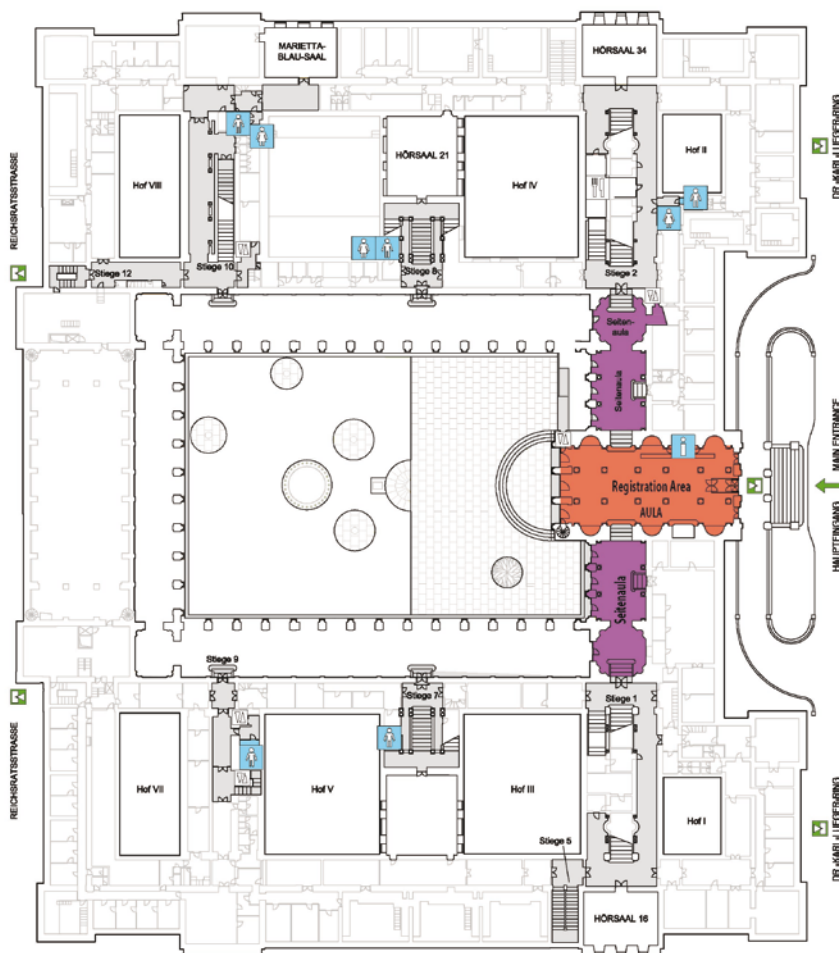


Optogait is an innovative movement analysis system which acquires the spatial-temporal parameters of a gait (Perry) and of a run. It is based on optical sensors which work at a 1000 Hz frequency (0,001 seconds precision) and with a 1 cm spatial resolution. The system works both on treadmill or, if a larger acquisition surface is needed, as a modular system (from 2 up to 100 meters). The absence of moving mechanical parts ensures accuracy and great reliability.

Furthermore, thanks to cameras that can be positioned as desired, Optogait allows recording of the videos of the performed tests, automatically synchronizing them with the measured events. This makes it possible to enjoy the advantages of cross-checking between data and images.

The included software is easy to use and allows quick visualization and different types of comparisons between the stored tests.

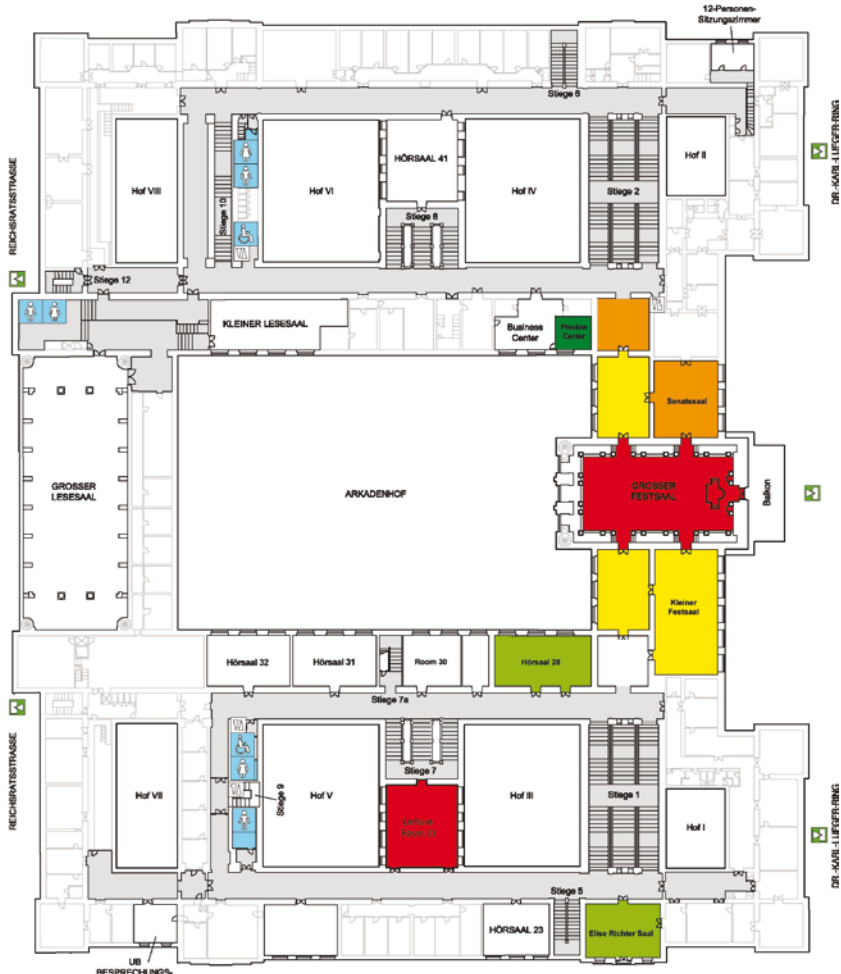
FLOOR PLANS - MEZZANIN - HOCHPARTERRE



universität
wien

- | | | | |
|------------------------------|-----------------------------------|-----------------------------------|--------------------------------|
| Exit
Ausgang | Elevator
Aufzug | Food & Beverages
Gastronomie | ATM/Cash Dispenser
Bankomat |
| Ladies
WC Damen | Men
WC Herren | Disabled
Behinderten WC | Information Desk
Portier |
| Lecture Room
Vortragssaal | Preview Room
Medienaufnahme | Exhibition Area
Ausstellung | Common Area
Gang |
| Poster Area
Poster | Internet Corner
Internetzugang | Registration Area
Registration | User Group
Meeting Room |

FLOOR PLANS - 1st FLOOR - 1. STOCK



NOTES

VICON GOLD SPONSOR OF ESMAC.11

**Come and meet your local Vicon team
at stand #1 in the Kleine Festsaal room.**

Usergroup meeting

See what's new at Vicon during our user group meeting – Thursday
15th September at 7pm in the Elise Richter Saal room on the first floor.

Demo and Support room

A gait lab will be set up in the Elise Richter Saal room for demos and
one-to-one support sessions. Please contact a Vicon representative
to book your place.

