

Wednesday 17 Oct

8:30 - 8:50

Welcome speech

8.50 - 9:40

ICNR-WeRob Plenary #2- Prof. Michael Goldfarb: Low-Power Approaches to Wearable Robotics for Minimizing Physical Disability

ICNR Sessions

WeRob Sessions

INBOTS Sessions

9:40 - 11:10

T1- SS1. Bayesian models for motor rehabilitation and control

T2 - SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications

WeR5. Benchmarking wearable robots

INBOTS6 Promote societal and socio-economic uptake of robotics

11:10-11.30

Coffee break - Project demo: AIDE

11.30-13:00

T4 - SS22. Pattern Recognition Techniques for assessment, training and rehabilitation

T2 - SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications

T3 - SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation

WeR12. Exoskeleton Research in Europe

INBOTS6 Promote societal and socio-economic uptake of robotics

13:00-14:10

Lunch

14:10-15:00

ICNR-WeRob Plenary #3 - Prof. Marcia K O'Malley: Enhancing Human Performance with Wearable Haptics

15:00-16:30

T3 - SS13. Neural Signal Analysis: Novel Approaches to Understanding Brain Diseases

T2 - SS6. Increasing the exercise intensity during gait trainin

WeR9. Human modeling and simulation for neurorehabilitation engineering

WeR12. Exoskeleton Research in Europe

15:18.30 - INBOTS4 Standardization - Challenges and needs of Interactive Robots in the industry, healthcare and service domain

16.30-18:00

Coffee break and poster session - Project demo: XoSoft

18:00-22:00

Social Events (City Tour)

ICNR - T1 - SS1. Bayesian models for motor rehabilitation and control – Room Auditorium

Authors	Title
Organizer	Luca Citi, University of Essex, UK
Camilla Pierella, Christian Giang, Elvira Pirondini, Nawal Kinany, Martina Coscia, Jenifer Miehlbradt, Cecile Magnin, Pierre Nicolo, Adrian Guggisberg and Silvestro Micera	Personalizing exoskeleton-based upper limb rehabilitation using a statistical model: a pilot study
Sohail Siadatnejad, Francesco Negro and Luca Citi	Hybrid Gaussian Point-Process Model for Finer Control of Myoelectric Robotic Hands
Johannes Zajc, Markus Puchinger, Michael Russold and Margit Gfoehler	Comparison of three control strategies for an upper arm rehabilitation device
Matteo Bianchi	Human hand sensing and motor control: from postural synergies to dynamic integration of touch and proprioception

ICNR - T2 - SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications – Room Pacinotti

Authors	Title
Organizers	Giacomo Severini, Donal Holland.
Giacomo Severini	A Perspective on the Use of Error Augmentation in Robot-Assisted Gait Training of Stroke Survivors
Simone Benatti, Fabio Montagna, Victor Javier Kartsch Morinigo, Abbas Rahimi and Luca Benini	Towards Versatile Fast Training for Wearable Interfaces in Prosthetics
Massimo Sartori, Guillaume Durandau, Herman van der Kooij and Dario Farina	Multi-scale modelling of the human neuromuscular system for symbiotic human-machine motor interaction
Ivan Vujaklija	Novel Control Strategies for Upper Limb Prosthetics
Krithika Swaminathan, Sangjun Lee, Richard Nuckols, Dheepak Revi, Puneet Singh, Rob Howe, Maurice Smith and Conor Walsh	Biomechanics Underlying Subject-Dependent Variability in Motor Adaptation to Soft Exosuit Assistance
Demy Kremers, Justin Fong, Vincent Crocher, Ying Tan and Denny Oetomo	Sensorless Force Estimator in Rehabilitation Robotics
Conor Walsh	Recent Results from Evaluation of Soft Wearable Robots in Clinical Populations
Michele Barsotti, Fabio Stroppa, Nicola Mastronicola, Simone Marcheschi and Antonio Frisoli	Teleoperated bilateral-arm rehabilitation with ALEX Rehab Station

Stefano Mazzoleni, Rossella Crecchi and Federico Posteraro

Timing of motor recovery in subacute and chronic stroke patients during upper limb robot-assisted rehabilitation

Jaeyoung Kim, Minsu Chang and Doyoung Jeon

The AI supervisor for the effective treadmill training system of rehabilitation and exercise

Nicola Lotti, Davide Piscopiello and Vittorio Sanguineti

An user model for adaptation of task parameters in robot-assisted exercise

Mine Sarac, Daniele Leonardis, Massimiliano Gabardi, Massimiliano Solazzi and Antonio Frisoli

Bilateral Rehabilitation of Hand Grasping with an Underactuated Hand Exoskeleton

ICNR - T2 - SS6. Increasing the exercise intensity during gait training – Room Auditorium

Authors

Title

Organizers

Eva Swinnen and Eric Kerckhofs

Eric Kerckhofs

Theoretical models in rehabilitation psychology to increase the active participation of the patient

Nina Lefebber

What is the exercise intensity? Energy Consumption and Cardiorespiratory Load during (robot-assisted) gait

Emma De Keersmaecker and Eva Swinnen

How to increase the exercise intensity? The use of virtual reality during gait training

Bart Jansen

How to increase the exercise intensity? The use of gaming during gait training

Carlos Rodriguez-Guerrero & Drs. David Rodriguez Cianca

New developments in the technology for gait rehabilitation

ICNR - T3 - SS13. Neural Signal Analysis: Novel Approaches to Understanding Brain Diseases – Room Fermi

Authors

Title

Organizers

Carlos Gómez Peña and Jesús Poza

Babak Afsharipour, Sourav Chandra, William Rymer and Nina Suresh

Effect of Botulinum Toxin Injections on Stretch Reflex Responses of Spastic Elbow Flexors in Hemispheric Stroke Survivors: Case study

Fabio Baselice, Antonietta Sorriso, Rosaria Rucco and Pierpaolo Sorrentino

A novel brain functional connectivity measurement based on phase similarity

Saúl J. Ruiz-Gómez, Carlos Gómez, Jesús Poza, Pablo Núñez, Víctor Rodríguez-González, Aarón Maturana-Candelas and Roberto Hornero

Analysis of Information Flux in Alzheimer's Disease and Mild Cognitive Impairment by Means of Graph-Theory Parameters

Pablo Núñez, Jesús Poza, Carlos Gómez, Víctor Rodríguez-González, Saúl J. Ruiz-Gómez, Aarón Maturana-Candelas and Roberto Hornero

Characterizing Non-stationarity in Alzheimer's Disease and Mild Cognitive Impairment by Means of Kullback-Leibler Divergence

Aarón Maturana-Candelas, Carlos Gómez, Jesús Poza, Saúl J. Ruiz-Gómez, Pablo Núñez, María Rodríguez, Manuel Figueruelo, Carmen Pita, Nádia Pinto, Sandra Martins, Alexandra Lopez, Iva Gomes and Roberto Hornero
Ioannis Delis, Robin Ince, Paul Sajda and Qi Wang

Analysis of spontaneous EEG activity by means of multiscale spectral entropy for early detection of Alzheimer's disease

Information-theoretic characterization of the neural mechanisms of active multisensory decision making

ICNR - T3 - SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation – Room Fermi

Organizer	Authors	Title
	Marco Iosa, Daniela De Bartolo, Gabriella Antonucci and Stefano Paolucci	Movement and numbers: the mathematics behind motor actions
	Francesca Lunardini, Federico Matteo, Matteo Cesari, Nunzio Alberto Borghese and Simona Ferrante	Exergame for Continuous and Transparent Monitoring of Handgrip Strength and Endurance
	Fabrizio Patane	Measurement accuracy in movement analysis technology
	Giovanni Morone, Simone Grandi, Sheyda Ghanbari Ghoshchi, Marco Iosa and Stefano Paolucci	Wearable devices and virtual reality for neurorehabilitation: an opportunity for home rehabilitation
	Maurizio Petrarca	The Development of Gait Analysis in Developmental Age
	Pietro Picerno, Pietro Caliandro, Chiara Iacovelli, Chiara Simbolotti, Michele Crabolu, Danilo Pani, Giuseppe Vannozzi and Andrea Cereatti	Assessing reach-to-grasp movements in the stroke unit: validity of an inertial sensor-based approach

ICNR - T4 - SS22. Pattern Recognition Techniques for assessment, training and rehabilitation – Room Auditorium

Organizer	Authors	Title
	Michela Balconi, Davide Crivelli, Giulia Fronda and Irene Venturella	Neuro-rehabilitation and neuro-empowerment by wearable devices. Applications to well-being and stress management
	Laila Craighero	Invited speaker
	Sara Invitto, Antonio Della Torre and Ross Rinaldi	Neuroprosthetic haptic interface and haptic stimulation: neuromorphic microtransduction and EEG alpha variations

Lucia Billeci, Alessandro Tonacci, Daniela Marino, Laura Insana, Giampaolo Vatti and Maurizio Varanini	A machine learning approach for epileptic seizure prediction and early intervention
Claudio Del Percio, Vitoantonio Bevilacqua, Antonio Brunetti, Roberta Lizio, Andrea Soricelli, Raffaele Ferri, Flavio Nobili, Loreto Gesualdo, Giancarlo Logroscino, Marina De Tommaso, Antonio Ivano Triggiani, Marina Blūma, Giovanni B Frisoni and Claudio Babiloni	Classification of healthy subjects and Alzheimer’s disease patients with dementia from cortical sources of resting state EEG rhythms: comparing different approaches
Marina de Tommaso, Eleonora Gentile, Katia Ricci, Anna Montemurno, Marianna Delussi, Eleonora Vecchio, Giancarlo Logroscino, Antonio Brunetti and Vitoantonio Bevilacqua	Bioelectrical Correlates of Emotional Changes Induced by Environmental Sound and Colour: from Virtual Reality to Real Life

WeR5. Benchmarking wearable robots – Room Galilei

Organizers

Diego Torricelli, Jan Veneman, Simona Crea

Authors

Title

Jule Bessler, Leendert Schaake, Catherine Bidard, Jaap Buurke, Aske Lassen, Kurt Nielsen, José Saenz and Federico Vicentini	COVR – Towards simplified evaluation and validation of collaborative robotics applications across a wide range of domains based on robot safety skills
Matteo Lancini, Simone Pasinetti, Valeria Montini and Giovanna Sansoni	Monitoring upper limbs during exoskeleton-assisted gait outdoors
Roberto Conti, Francesco Giovacchini, Lorenzo Saccares, Nicola Vitiello, Jose Louis Pons and Diego Torricelli	What do people expect from robotic benchmarking? Preliminary results of the EUROBENCH survey
Myunghee Kim, Ye Ding, Charles Liu, Jinsoo Kim, Sangjun Lee, Nikolaos Karavas, Conor Walsh and Scott Kuindersma	Human-in-the-loop Bayesian Optimization of a Tethered Soft Exosuit for Assisting Hip Extension
Diego Torricelli, David Pinto-Fernandez, Roberto Conti, Nicola Vitiello and Jose Luis Pons	A review of performance metrics for lower limb wearable robots: preliminary results
Erik Prinsen and Jaap Buurke	Human likeness as a benchmarker for wearable robotics

WeR9. Human modeling and simulation for neurorehabilitation engineering – Room C

Organizers

J.M. Font-Llagunes, F.J. Alonso, J. Cuadrado.

Authors

Title

Francisco Mouzo, Urbano Lugris, Javier Cuadrado, Josep Maria Font-Llagunes and Francisco Javier Alonso

Matthew Millard, David Franklin and Walter Herzog

Friedl De Groote, Lorenzo Pitto, Hans Kainz, Antoine Falisse, Eirini Papageorgiou, Mariska Wesseling, Sam Van Rossom, Kaat Desloovere and Ilse Jonkers

Renaud Ronsse

Peter Ferguson, Brando Dimapasoc, Yang Shen and Jacob Rosen

Marta Lorenzini, Wansoo Kim, Elena De Momi and Arash Ajoudani

Calibration and validation of a skeletal multibody model for leg-orthosis contact force estimation

A continuous and differentiable mechanical model of muscle force and impedance

SimCP: A Simulation Platform to Predict Gait Performance Following Orthopedic Intervention in Children with Cerebral Palsy

Bio-inspired walking: from humanoids to assistive devices

Design of a Hand Exoskeleton for Use with Upper Limb Exoskeletons

A Real-time Graphic Interface for the Monitoring of the Human Joint Overloadings with Application to Assistive Exoskeletons

WeR12. Exoskeleton Research in Europe – Room Galilei

Organizers

Katja Mombaur, Jan Babic

Authors

Title

Loris Roveda, Tito Dinon, Filippo Lucetti, Nicola Pedrocchi and Lorenzo Molinari Tosatti

H2020 CleanSky 2 EURECA: Design and Control of a Cooperative Manipulator for Industrial Installation Tasks

Jesús Ortiz, Christian Di Natali and Darwin G. Caldwell

XoSoft - Iterative design of a modular soft lower limb exoskeleton

Marco Caimmi, Ilaria Carpinella, Rachele Di Giovanni, Dario Ellena, Lorenzo Molinari Tosatti, Davide Cattaneo, Maurizio Ferrarin and Claudio Solaro

Preliminary Usability and Efficacy Tests in Neurological Patients of an Exoskeleton for Upper-Limb Weight Support

Herman van der Kooij

Symbitron: Symbiotic man-machine interactions in wearable exoskeletons to enhance mobility for paraplegics

Jesus Ortiz, Stefano Toxiri and Darwin Caldwell

Beyond Robo-Mate: Towards the next generation of industrial exoskeletons in Europe

Cristina Piazza, Manuel Giuseppe Catalano, Matteo Bianchi, Emiliano Ricciardi, Domenico Prattichizzo, Sami Haddadin, Andreas Luft, Olivier Lamercy, Roger Gassert, Eike Jakobowitz, Herman Van Der Kooij, Frederick Tonis, Fabio Bonomo, Benjamin de Jonge, Tomas Ward, Kristin D. Zhao, Marco Santello and Antonio Bicchi

The Softpro project: Synergy-based Open-source Technologies for Prosthetics and Rehabilitation

Diego Torricelli and Jose Luis Pons

EUROBENCH: Preparing Robots for the Real World

Hannes Bleuler

An Absolute MUST for Exoskeletons: Personalization of Design, Actuation, Control

Jan Babič, Idsart Kingma, Jonas Bornmann, Katja Mombaur, Matthias Näf, Tadej Petrič, Han Houdijk, Jose Gonzalez-Vargas, Saskia Baltrusch and Nejc Šarabon

SPEXOR: Design and development of passive spinal exoskeletal robot for low back pain prevention and vocational reintegration

INBOTS4: Standardization - Challenges and needs of Interactive Robots in the industry, healthcare and service domain – Room D

Authors	Title
Saskia Maresch, DIN e. V./ Germany/ National Standardization Body	Standardization in the R&D phase – how can this support SMEs?
Saskia Maresch, DIN e. V./ Germany/ National Standardization Body	Inclusive robots for a better society (Inbots) – what is being done in relation to standardization
Prof. Gurvinder Singh Virk (InnoTecUK and CLAWAR, United Kingdom/ ISO TC 299	ISO Safety and modularity standards for service robots
Francesco Ferro (PAL Robotics/ Spain/ SME)	Certification process for service robots – CE mark and challenges
Arantxa Renteria (TECNALIA/ Spain/ R&D)	Medical robotics and the daunting certification process
Andras Toth (Budapest University of Technology and Economics/Hungary / R&D)	Attitudes in standards management at start-up and developing SMEs – analysis of case studies from the wearable robot domain
Massimo Di Pardo (Centro Ricerche Fiat/ Italy/ R&D)	Human robot collaboration criteria for the implementation in the shop floor
Prof. Michiel de Looze (TNO/ the Netherlands/ R&D)	Need for evaluation standards in relation to industrial exoskeletons
Jule Bessler (Roessingh Research and Development/ the Netherlands/ R&D)	COVR – towards simplified evaluation and validation of collaborative robotics applications across a wide range of domains based on robot safety skills
Prof. Gurvinder Singh Virk, Andras Toth, Jan Veneman, Prof. Michiel de Looze	Panel Standardization - Challenges and needs of Interactive Robots in the industry, healthcare and service domain

INBOTS6: Promote societal and socio-economic uptake of robotics – Room D

Authors	Title
Prof. Robert Riener, ETH Zurich	Rehabilitation 4.0: What robots will change!
Domenico Prattichizzo, Monica Malvezzi, Gionata Salvietti, UNISI	Supernumerary Robotic Fingers to Compensate and Augment Human Manipulation Abilities
Thomas Ryberg, Robotics Care AB	Challenges and opportunities of robotic innovations in elderly care
Kilian Baur, Florian L. Haufe, Roland Sigrist, Katrin Dorfschmid, and Robert Riener, ETH Zurich	The Cybathlon - Bionic Olympics to benchmark assistive technologies

Wednesday 17 Oct -Poster Session

Bertine M. Fleerkotte, Jaap Buurke, Edwin H. F. Van Asseldonk and Johan. S. Rietman	The effect of assist-as-needed support on energy expenditure during gait training of chronic stroke patients in LOPESII	SS10. The use of ambulant technology in stroke rehabilitation
Gabriel Aguirre Ollinger, Ashwin Narayan, Francisco Anaya Reyes, Hsiao-Ju Cheng and Haoyong Yu	An Integrated Robotic Mobile Platform and Functional Electrical Stimulation System for Gait Rehabilitation Post-Stroke	SS10. The use of ambulant technology in stroke rehabilitation
Rahul Kumar Singh, Rejin John Varghese, Jindong Liu, Zhiqiang Zhang and Benny Lo	A Multi-sensor Fusion Approach for Intention Detection	SS11. Redundancy and modularity in motor control: neuroscience, prosthetic, rehabilitative and assistive approaches
Jonas Schröder, Sara Kenis, Kris Goos, Steven Truijen and Wim Saeys	The effects of exoskeleton-assisted overground gait training in chronic stroke – a pilot study	SS11. Redundancy and modularity in motor control: neuroscience, prosthetic, rehabilitative and assistive approaches
Silvia E. Rodrigo and Claudia N. Lescano	The possible role of foot sole mechanoreceptors for gait neurorehabilitation. I – A review	SS11. Redundancy and modularity in motor control: neuroscience, prosthetic, rehabilitative and assistive approaches
Claudia N. Lescano and Silvia E. Rodrigo	The possible role of foot sole mechanoreceptors for gait neurorehabilitation. II – A dynamometric map of the foot sole	SS11. Redundancy and modularity in motor control: neuroscience, prosthetic, rehabilitative and assistive approaches
N. Alberto Borghese, Jacopo Essenziale, Manuel Pezzera, Alessandro Tironi, Renato Mainetti, Roberta Cazzaniga, Barbara Reggiori, Simone Mercurio and Paolo Confalonieri	Design and development of a web-based platform for comprehensive autonomous home rehabilitation management in multiple sclerosis	SS11. Redundancy and modularity in motor control: neuroscience, prosthetic, rehabilitative and assistive approaches
Tamaya Van Criekinge, Wim Saeys, Kyra Blankaert, Zoë Maebe, Charlotte van der Waal, Marijke Vink, Willem De Hertogh and Steven Truijen	The effect of trunk training on trunk control, standing balance and gait: A systematic review and meta-analysis	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Tamaya Van Criekinge, Wim Saeys, Ann Hallemans and Steven Truijen	Trunk kinematics during walking after sub-acute stroke	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Cristian Camardella, Luis Pelaez Murciego, Shangjie Tang, Federica Bertolucci, Carmelo Chisari, Michele Barsotti and Antonio Frisoli	Simple tool for functional and physiological stroke patients assessment	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation

Erika D'Antonio, Gaetano Tieri, Stefano Paolucci, Fabrizio Patané and Marco Iosa	Postural sway responses to 3D virtual dynamic visual stimulation in post-stroke patients	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Serena Ricci, Aaron Bruce Nelson, Elisa Tatti, Giulio Tononi, Chiara Cirelli and M. Felice Ghilardi	The neural effects of extended practice and the benefits of a nap	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Elisa Galofaro, Robert A Scheidt, Ferdinando A. Mussa-Ivaldi and Maura Casadio	Testing the ability to represent and control a contact force	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Paolo Meriggi, Elena Brazzoli, Tecla Piacente, Marcella Mazzola and Ivana Olivieri	Smart Objects in Pediatric Rehabilitation: some Preliminary Results from a Research Protocol	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Mattia Corzani, Alberto Ferrari, Pieter Ginis, Alice Nieuwboer and Lorenzo Chiari	Analysis of Biofeedback Effects in Parkinson's disease at Multiple Time-Scales	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Daniele Coraci, Marco Paoloni, Massimiliano Mangone, Chiara Iacovelli, Francesco Ruggeri, Valter Santilli and Luca Padua	Proposal of a method supporting the interpretation of gait analysis kinematic data.	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Alice Mantoan, Stefano Lai, Lucia Moro, Alessandro Pietro Bardelli, Michela Ugazzi, Andrea Turolla and Luca Ascari	A preliminary study on quantitative assessment of functional tasks on stroke patients using a novel wearable platform	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Andrea Zonnino and Fabrizio Sergi	Model-based estimation of individual muscle force given an incomplete set of muscle activity measurements	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Raffaele Conte, Alessandro Tonacci, Francesco Sansone, Gianluca Diodato, Maria Cristina Scudellari, Andrea Grande, Anna Paola Pala, Guja Astrea, Silvia Frosini and Filippo Maria Santorelli	PhysioTest: a dedicated module to collect data from physiotherapy assessments in neuromuscular diseases	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Hamidreza Barnamei	Effect of motor nerve on lower limb coordination variability during high-heel and barefoot gait	SS14. New Frontiers in Movement Analysis: from assessment to rehabilitation
Oscar I. Caldas, Oscar F. Avilés, Mauricio Mauledoux and Carlos Rodriguez	Closed-loop system with biofeedback for engagement control in virtual rehabilitation	SS22. Pattern Recognition Techniques for assessment, training and rehabilitation
Ilaria Bortone, Domenico Buongiorno, Giuseppina Lelli, Andrea Di Candia, Giacomo Donato Cascarano, Gianpaolo Francesco Trotta, Pietro Fiore and Vitoantonio Bevilacqua	Gait Analysis and Parkinson's Disease: Recent trends on main applications in healthcare	SS22. Pattern Recognition Techniques for assessment, training and rehabilitation
Jichai Jeong and Sunghye Dong	Intra-Subject Invariant Classification Modeling for Spectral Features in EEG signals using Decision Fusion Method	SS22. Pattern Recognition Techniques for assessment, training and rehabilitation
Aitziber Mancisidor, Asier Brull, Asier Zubizarreta, Itziar Cabanes, Ana Rodriguez and Je Hyung Jung	Measurement of complementary trunk movement in robot-mediated upper limb rehabilitation	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications

Ana Cisnal de La Rica, Rubén Alonso Alonso, Javier P. Turiel, Juan-Carlos Fraile Marinero, Víctor Lobo Granado and Víctor Moreno San Juan	EMG based bio-cooperative direct force control of an exoskeleton for hand rehabilitation: A preliminary study	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Fiorenzo Artoni, Elena Massai and Silvestro Micera	EEG decoding of rest and overground walking: a feasibility study	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Christopher Bitikofer, Parker Hill, Eric Wolbrecht and Joel Perry	Analysis of Shoulder Displacement During Activities of Daily Living and Implications on Design of Exoskeleton Robotics for Assessment	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Parker Hill, Christopher Bitikofer, Shawn Trimble, Eric Wolbrecht and Joel Perry	PANDORA: Design of a 2 DOF Scapulohumeral Exoskeleton Device to Support Translation of the Glenohumeral Joint	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Yijun Niu, Zhibin Song and Jiansheng Dai	A Novel Parallel Mechanism for Self-aligning Knee Exoskeleton	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Mostafa Mohammadi, Romulus Lontic, Thomas B. Moeslund, Hendrik Knoche, Thomas Bak, Michael Gaihede, Bo Bentsen and Lotte N. Strojik Andreasen	Controlling a Drone by the Tongue – A Pilot Study on Drone Based Facilitation of Social Activities and Sports for People with Complete Tetraplegia	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Javier Gil, Andrea Ortiz, Antonio Del-Ama, José Luis Pons and Juan C. Moreno	Testing FES of ankle plantarflexor and dorsiflexor muscles to support unilateral gait disorders	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Stefano Mazzoleni, Elena Battini, Alessandro Rustici and Giulia Stampacchia	An overground robotic exoskeleton gait training in complete spinal cord injured patients	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Matti Itkonen, Shotaro Okajima, Hiroshi Yamasaki, Alvaro Costa and Shingo Shimoda	Orchestration of Sensors and Actuators in Neuro-rehabilitation Experiments and Practice	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications SS7. Shaping robotic training to maximize patient outcome: new trends and perspectives
Kadir Ozlem, Ozgur Atalay, Asli Atalay and Gokhan Ince	Textile Based Sensing System for Lower Limb Motion Monitoring	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications
Joel Perry, Rene Maura, Christopher Bitikofer and Eric Wolbrecht	BLUE SABINO: development of a bilateral exoskeleton instrument for comprehensive upper-extremity neuromuscular assessment	SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications

Suncheol Kwon and Won-Kyung Song

Inference of Proprioception using Kinematics in Robot Assisted Reach Exercise for Chronic Stroke Survivor

SS5. Improving Strategies for Human-Robot Interaction for Rehabilitation Robotics applications

Pablo Lopez Garcia, Stein Crispel, Tom Verstraten, Elias Saerens, Bryan Convens, Bram Vanderborght and Dirk Lefeber

Automotive Methods and Principles in the Development of New Transmissions for Wearable Robotics

WeR5. Benchmarking wearable robots

María Carmen Sánchez-Villamañán, Diego Torricelli and José L. Pons

Modeling Human-Exoskeleton Interaction: Preliminary Results

WeR5. Benchmarking wearable robots