PROGRAMME CMBBE2010
www.cmbbe2010.cf.ac.uk

	Wed: 24th	Thurs: 25th	Fri: 26th	Sat: 27th
'Registration Desk' will be open from 14.00 to 19.00 on the Tuesday 23rd Feb and 9.00 - 17.00 on 24th Feb at the Westin Hotel				
8.30-10.30	Welcome & Opening address 8.30 **Pilar Viedma Gil de Vergara** **PLENARY 1: EXPO I&II**	**PLENARY 3: EXPO I&II**	**PLENARY 5: EXPO I&II**	SS6 CARD: EXPO I&II DEN: EXPO III SS5 VIRT2: TURIA
10.30-10.50	Coffee Break/Posters Display : Galeria			
10.50-1.00	SS1 BIOL1: EXPO I&II ORTH1: EXPO III TISS: TURIA	SS4 FEIN: EXPO I&II SS10 ZIMM: EXPO III SS7 CELL1: TURIA FEBio Workshop: SABOYA	DATA: EXPO I&II SS11 SIMP: EXPO III SS7 CELL2/ORTH: TURIA	**PLENARY 7: EXPO I&II** Closure [12.50-1.00]
1.00-2.00	Lunch: Rosmarino			Farewell Lunch
2.00-4.00	**PLENARY 2: EXPO I&II**	**PLENARY 4: EXPO I&II**	**PLENARY 6: EXPO I&II**	
4.00-4.20	Coffee Break/Posters Display : Galeria			
4.20-7.10	SS8 MOVE: EXPO I&II SS9 NURO/CARD: EXPO II SS5 VIRT1: TURIA 8.00 Symposium Buffet, Westin EXPO	MINISYPOSIUM: MATERIALISE: EXPO I&II SS2: KNEE: EXPO III SS3: SPIN1: TURIA SS1: BIOL2: SABOYA	ORTH2: EXPO I&II FLOW: EXPO III SS3 SPIN2: TURIA SIMPLEWARE Workshop: SABOYA 8.00 Symposium Banquet, Alameda Palace	

9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering
CMBBE2010, The Westin Hotel, Valencia, Spain, 24-27 February 2010

Coordinators: John Middleton, Sam L Evans and Cathy Holt (Cardiff University, UK)
Christopher Jacobs (Columbia University, New York, USA)
Brian Walker (Arup, Birmingham, UK) , Carlos Atienza (IBV, Valencia, Spain)

Technical Advisory Panel and Invited Speakers:

Taiji ADACHI	JAPAN
Frank P.T. BAAIJENS,	THE NETHERLANDS
Lynne BILSTON,	AUSTRALIA
Christoph BOURAUEL	GERMANY
Ximo Sancho i BRU	SPAIN
Roberto CONTRO	ITALY
Jean-Marie CROLET	FRANCE
Tim DAVID	NEW ZEALAND
Manuel DOBLARE	SPAIN
Denis DOORLY	UK
Marie-Christine HO BA THO	FRANCE
Edward GUO	USA
Philippe GORCE	FRANCE
Richard HALL	UK
Scott HOLLISTER	USA
Renato N. JORGE	PORTUGAL
Ivar KNETS	LATVIA
Ralph MUELLER	SWITZERLAND
Arturo NATALI	ITALY
Glen L NIEBUR	USA
Cees OOMENS	THE NETHERLANDS
Djenane PAMPLONA	BRAZIL
Marcus PANDY	AUSTRALIA
Antonio PEREZ	SPAIN
Terry PETERS	CANADA
Riccardo PIETRABISSA	ITALY
Dominique PIOLETTI	SWITZERLAND
Lalao RAKOTOMANANA	FRANCE
Stephen RICHMOND	UK
Nigel SHRIVE	CANADA
Aboulfazl SHIRAZI-ADL	CANADA
Wafa SKALLI	FRANCE
Robert SPILKER	USA
Jos VAN DER SLOTEN	BELGIUM
Charley TAYLOR	USA
Joao TAVARES	PORTUGAL
Marc THIRIET	FRANCE
Paul TOMLINS	UK
Pascal VERDONCK	BELGIUM
Marco VICECONTI	ITALY
Jeffrey A. WEISS	USA
Phillipe YOUNG	UK

PROGRAMME CMBBE2010

Wednesday 24-02-2010
Opening Address: 8.30 am. Room: EXPO I&II
Pilar Viedma Gil de Vergara
Direccion General de Ordenacion
Conselleria de Sanidad, Generalitat Valencianan

Plenary 1 Wednesday 8.50-10.30 Room: EXPO I&II
Chair: Nigel Shrive

244   Cees Oomens (The Netherlands)
       The role of ischaemia and deformation in the development of pressure
       related deep tissue injury

231   Lynne E Bilston (Australia)
       Imaging methods for validation of computational models

259   Djenane Pamplona (Brazil)
       Numerical and experimental models for the aneurysms of abdominal aorta

252   Denis Doorly (UK)
       Transport, mixing and vortical flow structures in arteries and airways

10.30-10.50 Coffee Break/Posters/Displays

SS1 BIOL1: Wednesday 10.50-1.00 Room: EXPO I&II
Chairs: Brian Walker, Renato Natal Jorge

27   Alireza Roshan Ghias, Alexandre Terrier, Brigitte Jolles-Haeberli, Dominique
       P. Pioletti (Switzerland)
       Mechanical stimulation and bone regeneration inside scaffold: a combined in
       vivo experiment and multi-scale finite element analysis

69   M.P.M. Pato, N.G.S. Santos, E.B. Pires, P. Areias, M. de Carvalho, S. Pinto,
       D.S. Lopes (Portugal)
       Finite element simulations of the deformation of the diaphragmatic floor in
       healthy and pathological conditions

76   Carolina Garbe,Fernanda Gentil, Marco P.L. Parente, Pedro A.L.S. Martins,
       Renato M. N. Jorge (Portugal)
       Influence of different pressures of tympanic cavity at the biomechanical
       behavior of the human middle ear

77   Thuane da Roza, R. Natal Jorge, M. Parente, C. Saleme, M. Pinotti, A. Filho,
       T. Mascarenhas (Portugal)
       Simulation of female pelvic floor contraction

78   Helder Mata, R. Natal Jorge, S. Santos, A. Sousa, F. Raposo (Portugal)
       Construction of a 3D model from medical images, and simulation of
       kinematics of the knee joint

116   Y. Lu, Hanxing Zhu, Stephen Richmond, John Middleton (UK)
       Modelling the fibre orientation arrangement of skeletal muscles using FEM-NURBS method

134   J.P. Jorge, F.M.F. Simões, E.B. Pires, D.S. Lopes and P.A. Rego (Portugal)
       Finite element studies of a hip joint with femoro-acetabular impingement of the cam type

163   Nicola Cappetti, Alessandro Naddeo, Francesco Naddeo, Giovanni Francesco Solitro (Italy)
       Method for mechanical characterization of pre-meshed tissues based on CT scanning

ORTH1: Wednesday 10.50-1.00 Room: EXPO III
Chairs: Andrew New, Michael Gilchrist

13   Mehran Moazen, P. O'Higgins, Susan Evans, Michael J. Fagan (UK)
       Computational modelling in functional morphology - a case study of a lizard skull

17   Holly Everitt, S. Evans, Cathy Holt, Robert Bigsby, Imran Khan (UK)
       Acetabular component deformation under rim loading using digital image correlation and finite element methods

33   Arif Ozkan, Ibrahim MUTLU, Abdulkadir CENGIZ, Adem Aydin,Levent Buluc, M. Sefa Muezzinoglu, Yasin Kisioglu (Turkey)
       Testing of callus formation strength after bone fracture healing for rats

35   Susana Meireles, António Completo, José António Simões, Paulo Flores (Portugal)
       Bone structural behavior after patellofemoral replacement – a computational study

65   F. Boucher, P. Pouletaut. M-C, Ho Ba Tho (France)
       Extended 2D side-plate finite element model for cost-effective adaptive bone-remodeling prediction around short stems or resurfacing hip implants

73   Snehal Shetye, Christian Puttlitz (USA)
       Evaluation of a distal radius endoprosthesis using a validated finite element model of the canine antebrachium

83   Cyro Albuquerque-Neto, Jurandir Itizo Yanagihara (Brazil)
       Development of integrated regulation models for the human respiratory and thermal systems

118   Serena Bonaretti, Mauricio Reyes, Michael Kistler, Christof Seiler, Philippe Büchler (Switzerland)
       Combined statistical model of bone shape and mechanical properties for bone and implant modeling

296   Sam Evans (UK)
       The effect of the soft tissues on bone loading during hip fractures

21   Rachel B. Groves, S. L. Evans, S. Coulman, J. Birchall (UK)
      Mechanics of skin penetration by microneedles

29   Fernanda Gentil , C. Garbe, Marco P.L. Parente, Pedro A.L.S. Martins,
      Renato M. N. Jorge (Portugal)
      Dynamical behaviour of the reconstructed middle ear after inserting a stapes
      prothesis

85   Clayton Adam, Michael Swain (Australia)
      The effect of friction on indenter force and pile-up in numerical simulations of
      bone nanoindentation

92   Finn Donaldson, P. Pankaj, D.M.L. Cooper, C.D.L. Thomas, J.G. Clement,
      A.H.R.W. Simpson (UK)
      Orthotropic elastic constants of cortical bone can be estimated from canal
      volume ratio

95   Harald Studer, Hansjörg Riedwyl, Philippe Büchler (Switzerland)
      Numerical model of the human cornea based on stromal microstructure:
      identification of mechanical properties for two age groups

122   H. Brockaert, P.E. Mazeran, M. Rachik, M-C. Ho Ba Tho (France)
      Bone anisotropy elasticity derived from nanoindentation imprint spring back.

152   Frank Niemeyer, Tim Wehner, Lutz Claes, Anita Ignatius, Ulrich Simon
      (Germany)
      Simulation of the callus distraction treatment

204   Jakson Manfredini Vassoler, Eduardo Alberto Fancello (Brazil)
      A variational model for viscoelastic fiber reinforced soft tissues including
      damage

15   Rana Zakezadeh, Nasser Fatouraee (Iran)
      Three-dimensional heat transfer analysis within the human eye model using
      the finite element method

1.00-2.00 Lunch

Plenary 2 Wednesday 2.00-4.00 Room: EXPO I&II
Chair: Cees Oomens

238   Tim David (New Zealand)
      The challenge of multiple scales in the biological sciences: applications in
      cerebro-vascular perfusion

255   Robert Spilker (USA)
      Efficient meta models through integrated computational, statistical and
      experimental methods

257   Dominique Pioletti (Switzerland)
        Prediction of bone formation around drug delivery implants

249   Lalao Rakotomanana (France)
        Influence of the fluid-structure interaction in biomechanics : Application to
        coupled modal analysis and dynamics of the aorta under a impacting shock

261   Taiji Adachi (Japan)
        Computer simulation of trabecular bone remodeling in vertebral bodies

4.00-4.20 Coffee Break/Posters/Displays

SS8 MOVE: Wednesday 4.20-7.10 Room: EXPO I&II
Chairs: Cathy Holt, Marcus Pandy

168   R. Hainisch, M.Z. Karim, A.Kranzl, M.Gföhler, M. Pandy (Austria)
        Scaling of biomechanical models, a comparison: motion-tracking markers vs.
        Anatomical landmarks from MRI

60   JK Madete, A. Fuller, A. Klein, R. Trueman, S.B. Dunnett, A.E. Rosser, C.
        Holt (UK)
        Postural adjustments of an animal model of Parkinson's disease during over-
        ground locomotion

86   N. Farhat, V. Mata, D. Rosa, J. Fayos, X. Peirau (Spain)
        An inverse dynamic model of the human limb for estimating the relevant
        forces in the human knee. Application to sport activities

100   R. Taysir, Fabrice Megrot , Frederic Marin (France)
        Robustness analysis of musculoskeletal modeling of CP gait

131   Tien Tuan Dao, Philippe Pouletaut, Frédéric Marin, Marie-Christine Ho Ba
        Tho (France)
        Development of a patient specific 3D musculoskeletal model: Application to
        the simulation of the effect of the orthosis on the gait of a post polio residual
        paralysis (PPRP) subject

155   Daniel Nolte, Karol Tarcak, Uwe Wolfram, Lutz Claes, Karsten Urban, Ulrich
        Simon (Germany)
        New stability based optimization criterion allows prediction of antagonistic
        muscle forces in inverse dynamics models

82   John Rasmussen, Maxine Kwan, Michael Skipper Andersen, Mark de Zee
        (Denmark)
        Analysis of segment energy transfer using musculoskeletal models in a high
        speed badminton stroke

169   GM Whatling, B Lovern, C Wilson, CA Holt (UK)
        Objective classification of osteoarthritic, non-pathological and total knee
        replacement function using stair-gait functional variables

174 Carlos Andrade, Ricardo Matias, António Prieto Veloso (Portugal)
A method for scaling muscle attachment locations: practical considerations
to increase its accuracy

184 Peter Worsley, Mark Taylor, Maria Stokes (UK)
Assessment of knee kinematics and kinetics during gait using optimised
motion capture and musculoskeletal modelling

202 Christian Gammelgaard Olesen (Denmark)
The significance of passive stiffness to a computational musculoskeletal
spine model of a seated human

SS9 NURO/CARD Wednesday 4.20-7.10 Room: EXPO III
Chairs: Tim David, Denis Doorly

7 Hannah Farr, Timothy David (New Zealand)
Computational models of metabolic autoregulation in the cerebrovasculature

8 G. Karami, V. Dirisala, M. Ziejewski (USA)
Effects of neck stiffness on brain response under impact and blast loads

54 Mohsin Ahmed Shaikh, Tim David, D J N Wall (New Zealand)
Effects of spatially varying wall shear stress on coupled vascular endothelial
and smooth muscle cells

64 Yuelin Zhang, Shigeru Aomura And Satoshi Fujiwara (Japan)
Mechanism of cerebral contusion based on force duration of an external
impact

72 Mette Olufsen, M.C. Aoi, V. Novak (USA)
Modeling cerebral autoregulation

177 Azadeh Farnoush, Y. Qian, A.Avolio (Australia)
Computational fluid dynamic analysis of cerebral aneurysms on arterial
bifurcations

215 Seyed Mohammed Rajaai, Shahab M Baghaei, Ali Sadegh (Iran)
The role of meningeal interfaces in the brain motion relative to the skull in
low-velocity head impacts

229 Rania A. Rahman, Yves Remond, Daniel Baumgartner (Egypt)
A finite element modeling of the bridging vein and superior sagittal sinus
complex using homogenization by asymptotic expansion

3 Mona Abdolrazaghi, Kamran Hassani, Mahdi Navidbakhsh (Iran)
Analysis of intra-aortic balloon pump model with ovine myocardial infarction
(experimental data)

182 Mamadou Toungara, Christian Geindreau (France)
Arterial wall anisotropy and fluid structure interactions influence on stresses
distribution in Abdominal Aortic Aneurysms

183   Thangavelu Ravichandran, M.Chidambaram (India)
       Power spectrum analysis of heart rate variability in ischemic patients: A
       comparative study with age-matched and adult healthy subjects

SS5 VIRT1: Wednesday 4.20-7.10 Room: TURIA
Chairs: Marc Thiriet, Joao Tavares

18   Peter Mahieu, E. A. Audenaert , C. Pattyn (Belgium)
       Musculoskeletal soft tissue structure modelling for use in surgical
       applications and biomechanics

31   Francis Galloway, Rebecca Bryan, Mark Taylor, Prasanth Nair (UK)
       An improved registration scheme with application to statistical shape
       modelling of the human femur

300   Alexei Zhurov, Liliana Beldie, Yongtao Lu, John Middleton (UK)
       Construction of a nonlinear transversely-isotropic visco-hyperelastic
       compressible FE model for the PDL with LS-DYNA

48   C.A.D. Leguy, E.M.H. Bosboom, F.N. van de Vosse, (Netherlands)
       Effect of measurement uncertainties on wave propagation modeling in arm
       arteries

51   Alex F. de Araújo, Aledir S. Pereira, Norian Marranghello, Jonathan Rogéri,
       João Manuel R. S. Tavares (Brazil)
       Nonlinear smoothing of skin lesions images driven by derivative filters

191   Andrzej Przekwas, P. Wilkerson, X. Zhou, J. Buhrman, J Pellettiere, and H.
       Cheng (USA)
       Virtual human body generator for integrated biomechanics and physiology
       simulations

89   Marc Cavazza (UK)
       Integrating virtual humans' physiology with qualitative representations

102   Yoon Hyuk Kim, Won-Kyung Sung, Sunhwa Hahn (Korea)
       'e-Spine', the virtual physiological Korean spine project

32   Q. Zhang , J.Y.Wang, C.Lupton, J Tong, Q Liu, X.M Ding, Z.X. Guo (UK)
       Development of a subject-specific pelvic bone model, finite element
       analyses and experimental validation

8.00-8.30 Buffet Reception: WESTIN HOTEL EXPO
(Sponsored by ARUP, IBV and T&F)

Plenary 3 Thursday 8.30-10.30 Room: EXPO I&II
Chair: Dominique Pioletti

247   Christopher Jacobs (USA)
        Innovations in Cell and Molecular Biomechanics

245   Glen Niebur (USA)
        Direct computation of trabecular bone permeability and fluid flow in the
        marrow space

250   Manuel Doblare (Spain)
        Some applications in computational mechano-chemo-biology

232   Arturo Natali (Italy)
        Foot mechanics: analysis of heel pad tissue behaviour

248   Stephen Richmond (UK)
        Capturing and modelling facial movement

10.30-10.50 Coffee Break/Posters/Displays

SS4 FEIN: Thursday 10.50-1.00 Room: EXPO I&II
Chairs: Sam L Evans, Stephane Avril

45   Stéphane Avril, Laura Dubuis, Johan Debayle, Pierre Badel (France)
        Identification of the material parameters of soft tissues in a compressed leg

23   Guillaume Puel,Thierry Hoc, Anne Devulder, Laurent Henry, Denis Aubry,
        Laurent Sedel, Morad Bensidhoum (France)
        Microextensometry measurements and identification of mechanical
        properties on cortical bone

25   Alexandre Delalleau, Lagarde Josse (France)
        A clinical-relative stochastic inverse identification of skin mechanical
        properties

22   Elijah E.W. Van Houten, David v.R. Viviers, Mathew D. McGarry, John B.
        Weaver, Keith D. Paulsen (New Zealand)
        Quantifying tissue attenuation and damping structure with magnetic
        resonance elastography

46   Franquet Alexandre Avril, Le Riche (France)
        Comparison of different methods for the identification of elastic properties in
        stenosed carotid arteries: a numerical study

71   L-L Gras, D. Mitton, P. Viot, S.Laporte (France)
        Identification of muscle mechanical properties from a quasi-static tension
        test using inverse approach

74   David Mitton, F. El Masri, K. Rhissassi, E. Sapin, W. Skalli (France)
        Apparent Young's modulus of vertebral cancellous bone using inverse finite-
        element method

208   Kevin Mattheus Moerman, A.M.J Sprengers, A.J. Nederveen, C.A. Holt, S.L. Evans, C. Lally, C.K. Simms (Ireland)
Non-invasive imaging and inverse finite element analysis for the determination of the mechanical properties of soft tissue

5   Phil Riches (UK)
Indirectly determining permeability: Effect of experimental sampling and hold time.

SS10 ZIMM: Thursday 10.50-1.00 Room: EXPO III
Chairs: Andrew Hopkins, Liliana Beldie

212   Andrew Hopkins, Anthony Bull, Joern Seebeck (Switzerland)
Screw alignment potential in the reversed shoulder: what about the anatomy?

34   Ross Cotton, J. Kennedy, P. McGarry, H. Mullett, D. Fitzpatrick, P. Young, Simpleware (UK)
FEA of proximal humerus fracture fixation augmented with synthetic bone graft

44   Charles Pontonnier, Georges Dumont (France)
Functional anatomy of the arm for muscle forces estimation

94   Oliver Warlow, Sian Lawson (UK)
Factors influencing calculated tendon tensions in two established phalangeal models

148   A. D. Koutsou, J. C. Moreno J. L. Pons, J. A. Gallego and E. Rocon (Spain)
Muscle selectivity algorithm for superficial matrix electrodes

173   Magnus Gislason, Ben Stansfield and David Nash (UK)
The importance of the radiotriquetral ligament for proximal row stability in the wrist: A finite element study

200   Lindsay Stroud, Sebastien Talnet, Barry Lovern, S. L Evans, C. Holt (UK)
Investigating the use of digital image correlation to quantify scapula function

266   Barry P Pereira, Lai Tan Lei, Chong Sook Yee (Singapore)
Changes in the moment arm of forearm muscles during pro-supination in a disrupted distal radioulnar joint

SS7 CELL1: Thursday 10.50-1.00 Room: TURIA
Chairs: Glen Niebur, Aleš Iglič

70   Ales Iglic, Jasna Urbanija , Sarka Perutkova , Klemen Bohinc, P.B. Sunil Kumar, Veronika Kralj-Iglic (Slovenia)
Interactions between charged surfaces induced by nanoparticles

11   Amit Gefen, Noa Slomka (Israel)
Computational modeling of cellular loads in large deformation experiments

59   Doron Kabaso, Roie Shlomovitz, Tamar Yelin, Thorsten Auth, Virgilio Lew,
        Nir Gov (Israel)
        Cytoskeletal reorganization drives dynamic local shape changes

62   Sarka Perutkova, Ales Iglic, Matej Daniel, Veronika Kralj-Iglic (Slovenia)
        Modelling of inverted hexagonal phospholipid phase including lipid
        anisotropy

84   P. B. Sunil Kumar, Jan Astrom, Mikko Karttunen (India)
        Modeling cytoskeletal as a semi-flexible fibre networks with mobile cross-
        linkers

91   Andy L. Olivares, Josep A. Planell ; Damien Lacroix (Spain)
        Design of 3D scaffolds for tissue engineering applications

166   Wojciech Gozdz (Poland)
        Mathematical modelling of shape transformation of lipid vesicles induced by
        mechanical and thermodynamic stimuli

268   Dirk Drasdo, S. Hoehme, M. Brulport, A. Bauer, I. von Recklingkhausen, E.
        Bedawy, W. Schormann, M. Hermes, V. Puppe, R. Gebhardt, S. Zellmer, M.
        Schwarz, E. Bockamp, T. Timmel, J. G. Hengstler (France)
        Predicting mechanisms to restore tissue mass and architecture during liver
        regeneration: from experiments to virtual tissues and back

11.30-1.00 FEBIO Workshop: Room: SABOYA
Presented by Dr. Jeffrey Weiss, USA. Demonstration of new features in
FEBIO, followed by question/answer session

Plenary 4 Thursday 2.00-4.00 Room: EXPO I&II
Chair: Tim David
233   Jos vander Sloten (Belgium)
        Biomechanical models and intraoperative biomechanical

235   Philippe Young (UK)
        New software tools for modelling reality

243   Jeff Weiss (USA)
        Patient specific modeling of the dysplastic hip

253   Marcus Pandy (Australia)
        Muscle coordination of balance during human gait

279   Marc Thiriet (France)
        Coupling conservation equation to biomathematical models of nano and
        microscale events

04.00-04.20 Coffee Break/Posters/Displays

28   Youngjun Kim, Kang-il Kim, Kunwoo Lee (Korea)
                3D analysis of total knee arthroplasty using 2D-3D medical image
                registration

88   S. Guerard, J. Noailles, B. Frechede, C. Tardieu, W. Skalli (France)
                3d validated finite element model of a femoropatellar joint

26   Romain Rieger, R. Hambli, R. Jennane (France)
                Bone remodeling model based on mechanobiological stimulus

130   Javier Cepria, Perez-Gonzalez (Spain)
                Structure and algorithm of a three-dimensional quasi-static model of the
                tibio-femoral joint applied to analysis and comparison of different prosthesis
                models

149   John L Williams, William M. Mihalko, Brooke Sanford (USA)
                Simulating lunge maneuvers to predict and characterize functional
                performance of total knee implants with varying degrees of rotational
                malalignment

176   Linlin Li, Youngjun Kim,Yanzhao Ma, Kangil Kim, Kunwoo Lee (Korea)
                Post-operative analysis of biomechanical effect of TKA using finite element
                analysis

205   Joanna Li, Susanna Piccinelli, Cathy Holt, Sam Evans, Emma Blain, Daniele
                Dini, Mario Accardi (UK)
                Numerical modelling of articular cartilage mechanical behaviour

87   Seungbum Koo, Young Choi, Sangwook Yang (Korea)
                Optimal maker locations in the knee for knee kinematics study

SS3 SPIN1: Thursday 4.20-7.10 Room: TURIA
Chairs: Philippe Zysett, Richard Hall

289   Philippe Zysset (Austria)
                Finite element modeling of the human vertebral body: Research and clinical
                approaches

304   Sebastian Dendorfer (Denmark)
                In-vivo load cases for orthopedic device design

98   Fabio Galbusera, Hendrik Schmidt, Cornelia Neidlinger-Wilke, Hans-
                Joachim Wilke (Germany)
                Degenerative changes of the lumbar intervertebral disc: A parametric finite
                element study

10   Uwe Wolfram, Hans-Joachim Wilke, Philippe K. Zysset (Germany)
                Valid µFinite element models of vertebral trabecular bone can be obtained
                using tissue properties measured with nanoindentation under wet conditions

97   Hendrik Schmidt, Aboulfazl Shirazi-Adl, Fabio Galbusera and Hans-Joachim Wilke (Germany)
     The lumbar spine during daily activities – a finite element analysis

75   Ugur Ayturk, Christian Puttlitz (USA)
     The annulus fibrosus stabilizes lumbar motion segments treated with artificial disc replacement

146 F. Marin, N. Hoang , MC Ho Ba Tho (France)
     Influence of the mechanical definition of functional spinal unit on the musculoskeletal model of the cervical spine

139 L. Espinha, P. C. Fernandes, P. R. Fernandes and J. Folgado (Portugal)
     Computational analysis of stress and bone remodeling during an anterior cervical fusion

SS1 BIOL2: Thursday 4.20-7.10 Room: SABOYA
Chairs: Renato Natal Jorge, Djenane Pamplona

165 Pedro A. L. S. Martins, Agnaldo L. Silva-Filho, Agostinho Santos, Liliana Santos, Teresa Mascarenhas, Renato M. Natal Jorge, António J. M. Ferreia (Portugal)
     Biomechanics of the female pelvic cavity: Biomechanical properties of pelvic tissues

293 Liliana Beldie, Brian Walker (UK)
     FEA applications in biomedical engineering with LS-DYNA®

171 Sonia Santos, R. M. Natal Jorge (Portugal)
     Bruxism - A muscle analysis

105 A. Van Schepdael, J. Vander Sloten; L. Geris (Belgium)
     The biology of orthodontic tooth movement: a mathematical model

199 J.L. Alves, N. Yamamura, T. Oda, C. Teodosiu (Portugal)
     Numerical simulation of musculo-skeletal systems by V-biomech

206 M. Benderoth, Michael Meyn (Germany)
     A method to determine parameters for different elastic constitutive equations of vessel tissue in aneurysms of the abdominal aorta

210 Emanuele Luigi, AN Natali (Italy)
     Oesophageal tissues: Constitutive formulation and model parameters definition

219 Victor Primo, Irene Lara, José Luis Peris, Carlos Atienza (Spain)
     Densitometry: A necessary tool for novel biomaterials assessment

223 V. L. Allen Trindade, S. Santos & P. Martins & R. Natal Jorge (Portugal)
     Defining the oral mucous membrane's mechanical properties

40   C. Desmarais-Trépanier, P.-A. Vendittoli, M. Lavigne, N. Nuño (Denmark)
      New quantitative method to assess stress shielding following surface
      replacement arthroplasty: Femoral component design investigation

Plenary 5 Friday 8.50-10.30 Room: EXPO I&II
Chair: Manuel Doblare

251   Scott Hollister (USA)
      Multiscale and multiphysics design of tissue engineering scaffolds

254   Wafa Skalli (France)
      The EOS system and subject specific musculoskeletal modelling

256   Aboulfazl Shirazi-Adl (Canada)
      Biodynamics of the human spine

246   Roberto Contro (Italy)
      Direction dependent elastic and inelastic mechanical response of cortical
      bone investigated through nanoindentation testing and finite element
      simulations

242   Christoph Bourauel (Germany)
      In-vivo and in-vitro studies to determine the constitutive behaviour of the
      periodontal ligament

10.30-10.50 Coffee Break/Posters/Displays

DATA: Friday 10.50-1.00 Room: EXPO I&II
Chairs: Michael Gilchrist, James Cunningham

2   Ruhi Mahajan, Sarvan Kumar Pahuja (India)
      Design of a intelligent high speed data acquisition system

110   S. Sikora, Z. M. Jin, R. K. Wilcox (UK)
      Development of a new method for imaging the bone-cement interface under
      load for FE model validation

126   Sofie Van Cauter, Walter Okkerse, Guy Brijs, Matthieu De Beule, Benedict
      Verhegghe, Marc Braem (Belgium)
      Reproducibility of landmark identification on different CT images of the head
      in three-dimensional cephalometry

147   Volkan Esat, Jiling Feng, B Serpil Acar (UK)
      Features of ageing female car drivers for computational modelling

150   B Serpil Acar, Volkan Esat (UK)
      Computational modelling and analysis of pregnant traveller in railway
      vehicles

189   Ondrej Jirousek, Daniel Kytyr, Petr Zlamal (Czech Republic)
      Nonlinear FE modelling of deformation behaviour of trabecular bone
      microstructure compared to time-lapse micro-CT measurements

216	Rolf Krause, Johannes Steiner (Switzerland)
	On the numerical simulation of multidimensional and complex models in biomechanics

213	Rahele Alamdari, Karim Leilnahari, Nasser Fatouraee (Iran)
	Back muscles potential activity consideration in side posture for determining of muscles relaxation and fatigue on soft &firm mattresses

228	C. Pearce, P.G. Young, J. Price, B. Walker, L. Beldie (UK)
	Pressure response analysis in head injury

294	Shawn McGuan (USA)
	Computational modeling of ardipithecus ramidus: a revolution in evolution

SS11:SIMP Friday 10.50-1.00 Room: EXPO III
Chair: Philippe Young, Martin Geiger

305	Philippe Young, UK
	Theoretical advances and new applications of image based meshing

269	David Raymont, P.G. Young, L. Hao (UK)
	Internal micro-architecture generation

63	Ibrahim Mutlu, Arif Ozkan, Halil Atmaca, Levent Buluc, M. Sefa Muezzinoglu, Yasin Kisigolu (Turkey)
	Remodeling of orthopaedical implants using different techniques

81	E. Marchandise, J-F Remacle, C. Geuzaine (Belgium)
	Quality meshing of medical geometries with harmonic maps

156	C.A.Hanlon, S.M. Tarsuslugil, D.C. Barton, R. K. Wilcox (UK)
	Development of a method to create finite element models of spinal burst fractures

179	Brad Miles, Michael Hogg (Australia)
	Patient specific prediction of intraoperative peri-prosthetic femoral fracture during Hip Arthroplasty using a dynamic FE Method

SS7: CELL2/ORTH Friday 10.50-1.00 Room: TURIA
Chairs: Aleš Iglič, Liesbet Geris

297	Carlos M. Atienza (Spain)
	Interactive remote biomechanical tools for learning, design and planification

135	Hanifeh Khayyeri, Magnus Tagil, Sara Checa, Per Aspenberg, Patrick J. Prendergast (Ireland)
	Variation in cell process rates could explain inter-specimen variation in tissue differentiation

154	Feng Xue, Katey McKayed, Alexander Lennon, Veronica Campbell, Patrick Prendergast (Ireland)
	Computational investigation of influence of age on biomechanics of mesenchymal stem cells (MSCS)

181   Liesbet Geris, Tim Clarke, Joanna Ashbourn (Belgium)
Mathematical modelling of cell aggregates for bone tissue engineering using continuum methods

158   Lowell Edgar, Scott C. Sibole, Clayton J. Underwood, James E. Guilkey, Jeffrey A. Weiss (USA)
Simulating the influence of the extracellular matrix on 3D angiogenesis in vitro

114   Nicolas Vignais, E. Badier, B. Bideau (France)
In situ evaluation of the cushionning characteristics of different sport shoe midsoles

115   Sangbaek Park, Hyun-Dai Kag, Jihwan Kim, Soo-Won Chae, Young Eun Kim (Korea)
On the finite element modeling of foot-ankle complex

225   J. Subke (Germany)
Finite element modelling of sensomotoric insoles for the simulation of the biomechanical cause and effect relation on the foot

Plenary 6 Friday 2.00-4.00 Room: EXPO I&II
Chair: Jos Vander Sloten
239   Jean-Marie Crolet (France)
A possible explanation of the bony mechanotransduction process

236   Ximo Sancho i Bru (Spain)
Biomechanical models of the hand: Current challenges

240   Joao Tavares (Portugal)
Motion tracking in images based on stochastic filters and optimization

241   Renato Natal Jorge (Portugal)
On the biomechanics of the female pelvic cavity

258   Riccardo Pietrabissa (Italy)
From lab to market: the role of science to promote industrial applications

04.00-04.20 Coffee Break/Posters/Displays

ORTH2: Friday 4.20-7.10 Room: EXPO I&II
Chairs: M. C. Ho Ba Tho, Taiji Adachi
67   H. A. Kim, C. Brampton, G. J. Howard, J. L. Cunningham (UK)
Bone remodeling response of hip prosthesis using structural optimization

93   P. Pankaj, F.E. Donaldson, A.H.R.W. Simpson (UK)
Micro-finite-element analysis of the interactions of cortical bone with fixator wires and half-pins

96   N. Conlisk, P. Pankaj, C.R. Howie (UK)
       Mechanical environment in the distal femur and implant stability after TKA

101   H. Ozturk, P.B. Nair, M.T. Bah, S.L. Evans, A.M.H. Jones, M. Browne (UK)
       Computational and experimental assessment of primary stability of a
       cementless total hip replacement: The effect of the stem positioning

109   Javier Ferrís-Oñate, Iñigo Morales, María Blanco, Carolina Ávila, Stefano
       Deotti, Víctor Primo, Carlos M. Atienza, Javier Delgado, Esther Hurtós-
       Casals, Garbiñe Atorrasagasti (Spain)
       Development of an innovative generation of customized medical devices to
       be produced by rapid manufacturing technologies

136   Yuanyi Zhao, Zhongming Jin, Ruth K Wilcox (UK)
       Microscopic modelling of cement augmentation, a morphological validation
       method

138   Natalia Nuno, Christian Desmarais-Trépanier, Martin Lavigne, Pascal-André
       Vendittoli (Canada)
       New quantitative method to assess stress shielding following surface
       replacement arthroplasty: Femoral component design investigation

161   M. Reimeringer, Desmarais-Trépanier, Natalia Nuño (Canada)
       Is the use of a composite bone adequate for bone stresses prediction?

167   Corinne R. Adams, Benjamin J. Ellis, Michael D. Harris, Andrew E.
       Anderson, Christopher L. Peters, Jeffrey A. Weiss (USA)
       The acetabular labrum alters cartilage contact stresses and load transfer
       across the hip joint

186   Pavel E. Galibarov, Patrick Prendergast, Alex Lennon (Ireland)
       Simulating variable performance of joint replacements in patient-specific and
       population based scenarios

FLOW: Friday 4.20-7.10 Room: EXPO III
Chairs: Thomas Franz, Jan De Backer

38   Jianhua Zhu, Heow Pueh Lee, Kian Meng Lim, De Yun Wang, Shu Jin Lee,
       Thiam Chye Lim (Singapore)
       Assessment of post-operational nasal patency after open reduction and
       internal fixation of naso-maxillary fracture - a computer simulation study

39   Wim Vos, J. De Backer, S. Vinchurkar, R.Claes, A. Drollmann, D. Wulfrank,
       P. Parizel, W. De Backer J. De Backer, S. Vinchurkar, R.Claes, A.
       Drollmann, D. Wulfrank, P. Parizel, W. De Backer (Belgium)
       Validation of computational fluid dynamics (CFD) in airways using single
       photon computed tomography (SPECT)

55   Xiao Bing Chen, Heow Pueh Lee, Vincent Fook Hin Chong, De Yun Wang
       (Singapore)
       Effects of inferior turbinectomy on nasal airway heating capacity with
       different environmental temperature conditions

61   René P. Widmer, Stephen J. Ferguson (Switzerland)
      Simulation of biomaterial flow through trabecular bone with intrinsic
      permeability estimation

120   Takuya Sakata, Gaku Tanaka, Toshihiro Sera, Nobunori Kakusho, Hideo
      Yokota, Kenji Ono, Shu Takagi (Japan)
      Voxel-based modeling of airflow in the nasal cavities

125   Edmund Lobb, Donal Taylor, Denis Doorly (UK)
      Unsteady flow dynamics in a simplified nasal airway

141   Teruo Matsuzawa, Kiyoshi Kumahata, Kazuyoshi Kitagawa, Hutoshi Mori,
      Gaku Tanaka, Shigeru Ishikawa (Japan)
      Nasal cavity flow simulation with heat and humidity exchanging model of
      nasal cavity wall

194   Zhu Jianhua, Heow Pueh Lee, Kian Meng Lim, De Yun Wang, Shu Jin Lee,
      Thiam Chye Lim (Singapore)
      Assessment of post-operational nasal patency after open reduction and
      internal fixation of naso-maxillary fracture - a computer simulation study

271   C. Pennel, M. Lahoubi, P. Young (France)
      Synthetic network generation for flow simulations

SS3:SPIN2 Friday 4.20-7.10 Room: TURIA
Chairs: Richard Hall, Philippe Zysett

133   Sami Tarsuslugil, C.A.Hanlon, D.B.Barton, R.K.Wilcox (UK)
      Experimental validation of finite element models of Thoracolumbar vertebrae

6   B. Colobert, P. Violas, D. Vervaeke, D. Loiseau, J.J. Dufournet, L.
      Rakotomanana (France)
      A new 3D method of manufacturing of the trunk orthosis

107   Jérôme Noailly, Josep A. Planell, Damien Lacroix (Spain)
      Significance of the collagen criss-cross angle distributions in the lumbar
      annuli fibrosi as revealed by finite element simulations

1   D. Gagnon, A. Plamondon, A.Shirazi-Adl, C. Larivière (Canada)
      Comparison of two trunk biomechanical models in lifting: evaluation of
      assumptions and estimations

36   Wesley Womack, Christian Puttlitz (USA)
      Nonlinear structural finite element modeling of the human annulus fibrosus

108   Carolina Avila, Emilio Mas, María Blanco, Stefano Deotti, Iñigo Morales,
      Javier Ferrís-Oñate, Carlos Atienza (Spain)
      Biomechanical evaluation of a customized nucleus implant with a parametric
      lumbar spine model

162   Julien Vignollet, Chris Pearce, Zaoyang Guo, Phil Riches (UK)
      Biphasic swelling model for the nucleus pulposus of the intervertebral disc

164 Alessandro Naddeo, Nicola Cappetti, Francesco Naddeo, Giovanni Francesco Solitro (Italy)
Influence of the disk geometry on different FEM models of the spine

4.20 – 6.20 SIMPLEWARE Workshop: Room: SABOYA
Demonstration of Software Updates, Examples, Live Demo Image to Mesh, Hands on Session-bring own data. Presented by SIMPLEWARE

8.00 for 8.30 BANQUET: ALAMEDA PALACE Sponsored by Taylor & Francis, ARUP, Meditech (Prizes)

SS6 CARD: Saturday 8.30-10.30 Room: EXPO I&II
Chairs: Pacal Verdonck, Carlos Alberto Figueroa

16 Mazin Sirry, Peter Zilla, Thomas Franz (South Africa)
Finite Element Analysis of Scaffolds for Vascular Tissue Regeneration

20 Jan de Backer, Wim Vos; Annick Devolder; Lieve De Backer; Samir Vinchurkar; Paul Germonpré; Wilfried De Backer (Belgium)
Functional imaging of the respiratory system using computational fluid dynamics: assessment of the long term effect of small particle inhalation medication

37 Md. Abdul Hye, Manosh C. Paul (UK)
Large-eddy simulation of stenotic pulsatile flow

123 Ruth Aris, M. Vázquez, P. Lafortune, P. Villar, G. Houzeaux, D. Gil, J. Garcia-Barnès, M. Ballester, F. Carreras (Spain)
Massively parallel electromechanical model of the heart

127 Futoshi Mori, Hiroshi Ohtake, Junichiro Sanada, Keiichi Kimura, Osamu Matsui, Go Watanabe, Teruo Matsuzawa (Japan)
A simulation of blood flow effect to aneurysm in thrombosed dissected thoracic aorta

128 Frederic Maes, F. Deboeverie, B. Chaudhry, P. Van Ransbeeck, P. Verdonck (Belgium)
Embryonic hearts: how do they pump?

140 Kiyoshi Kumahata, Koji Nishiguchi, Shigenobu Okazawa, Akira Amano, Teruo Matsuzawa (Japan)
A simulation of heart motion interacting with cardiomyocyte behavior on eulerian based fluid-structure analysis

230 Shaokoon Cheng, Lynne Bilston (Australia)
A model of the hydrocephalus brain with endoscopic third ventriculostomy

117 Iñigo Morales, Juan Fayos, Javier Ferrís-Oñate, Carlos M Atienza, Miguel Peñarrocha, Valery Naranjo, Mariano Alcañiz, Salvador Albalat (Spain)
Biomechanical simulation for implant supported dental prostheses failure prediction using finite element models

137 A. Ramos, A. Completo, C. Relvas, M. Mesnard, A. Ballu, J. A. Simões (Spain)
The influence of condylar geometry and bone fixation screws on a TMJ implants

172 Ulrich Simon, Tim Wehner, Daniel Nolte, Lutz Claes, Frank Niemeyer (Germany)
Simulation of lateral distraction osteogenesis

188 Estevam Las Casas (Brazil)
Numerical analysis of a maxillary central incisor root after placement of a prefabricated post and radicular reinforcement

262 Susanne Reimann, Vanda Dadras, Ludger Keilig, Alireza Rahimi, Andreas Jäger, Christoph Bourauel (Germany)
Combined numerical/experimental analysis of the time-dependant mechanical behaviour of the periodontal ligament

264 Istabrak Hasan, Alireza Rahimi, Ludger Keilig, Rolf Krause, Christoph Bourauel (Germany)
Applying adaptive bone remodelling theory to the alveolar bone around dental implants in the fully osseointegrated state

274 Ludger Keilig, Khashayar Ilbak, Adrian Auderset, Manfred Grüner, Helmut Stark, Christoph Bourauel (Germany)
Numerical simulations of the stability of a novel chair-side bar system for use in prosthetic dentistry

290 Martin Geiger, F.G.Sander, B. Lapatki (Germany)
Characteristics of canine retraction measured using macro photogrametry

106 M.A.G. Merkx, J. O. Bescós, W. Huberts, A.S. Bode, E.M.H. Bosboom, J.H.M. Tordoir, M. Breeuwer, F.N. van de Vosse (Netherlands)
Segmentation of contrast-enhanced mra to facilitate patient-specific hemodynamic modeling for avf creation

112 Thibaut Bardyn, Xabier Larrea, Mauricio Reyes, Philippe Büchler (Switzerland)
Improving voxel-based mesh accuracy with smoothing: In-vitro study

121 Marco Stevanella, Francesco Maffessanti, Alice Arnoldi, Emiliano Votta, Massimo Lombardi, Oberdan Parodi, Enrico G. Caiani, Alberto Redaelli (Italy)

Feasibility of patient-specific finite element modeling of the mitral valve from cardiac MRI

153   Paolo Crosetto, Simone Deparis (Switzerland)
      Parallel algorithms for FSI problems in haemodynamics

159   Natalya Kizilova (Ukraine)
      A 1000-tube model of human systemic arterial tree: pulse wave propagation and reflection, medical diagnostics and surgery planning

192   P.G. Young, David Raymont , V. Bui Xuan, J.D. Stark (UK)
      Mesh generation for patient-specific modelling and simulation of human anatomy

195   Giovana Gavidia, Eduardo Soudah, Jorge Pérez, Miguel Cerrolaza, Eugenio Oñate (Venezuela)
      A novel technique for 3D reconstruction of myocardial tissue damage after ischemic heart disease using image processing in cardiac magnetic resonance imaging

10.30-10.50 Coffee Break Remove Posters/Displays

Plenary 7 Saturday 10.50-1.00 Room: EXPO I&II
Chair: Jeff Weiss
234   Pascal Verdonck (Belgium)
      Towards a patient-specific vascular access for hemodialysis treatment

237   Antonio Perez (Spain)
      FEM and statistical analysis for studying the optimal design of endodontic posts

260   Marie-Christine Ho-Ba-Tho (France)
      Soft tissue characterization derived from MRI by direct and inverse methods

292   Carlos Alberto Figueroa (USA)
      Computational tools for the analysis of long-term stability of abdominal aortic endografts

299   Nigel Shrive (Canada)
      Finite element modelling and complementary experiments can provide understanding of tissue function

1.00 Closure & Farewell Lunch

Prizes:
The organisers wish to thank ARUP, T&F and MediTech for sponsoring the following prizes:

The Arup prizes for
- Outstanding contribution to Applied Biomechanics" (€ 700)
- Best poster presentation" (€ 350)

The Taylor & Francis prize for
- Outstanding innovation in computer methods in biomechanics & biomedical engineering" (€ 700)

The Meditech prizes for "Best student presentations"
- First prize: € 500
- Second prize: € 200
- Third prize: € 100

All presentations will be considered for prizes and these will be presented at the Symposium Banquet

Poster Presentations:
Poster presentations will be displayed from Wednesday 8.30am to Friday 4.30pm in Galeria

58	BIOL	C. Huselstein	J. Tritz, R. Rahouadj, N. d'Isla, N. Charif, N. Benkirane-Jessel, D. Bensoussan, J.F. Stoltz	Cartilage engineering using a sprayed alginate hydrogel method	France
303	BIOL	Virginia Monteiro	Eugenio Oñate, Sergio Oller and Pooyan Dadvand	Numerical simulation of the Urinary Bladder	Spain
57	BIOL	JF Stoltz	Huselstein C. , De Isla N. , Tritz J. , Bensoussan D	Chondrocyte Mechanobiology and Cartilage Engineering	France
142	CELL	Marco Cantini	Gianfranco B. Fiore, Alberto Redaelli, Monica Soncini	CFD-aided optimization of channelled scaffolds for the culture of non-adherent cells	Spain
265	CELL	Chadha Chettaoui	Dirk Drasdo, François Graner, Michel Guillomot, Isabelle Hue, Ignacio Ramis-Conde, Alain Trubuil, Juhui Wang	Physically-based modeling of the trophoblast tissue morphogenesis.	France
273	DATA	J. Subke		A comparative study on the effect of the helmet therapy on infants with non-synostosis plagiocephaly	Germany
201	DATA	Lindsay Stroud	Barry Lovern, Richard Evans, Sam L Evans and Cathy Holt	Estimating the glenohumeral joint centre of rotation: regression equations versus helical axis	UK

103	DATA	Kyung Koh	Kyungsoo Kim, Won Man Park, Yoon Hyuk Kim	A patient-specific reconstruction method of distal femur from X-ray and sparse CT images	Korea
193	DATA	Wayne Ayre	Michael Howell, June Madete, Prof. Derek K. Jones and Dr. Cathy Holt	Quantifying manual and bimanual tasks using motion capture for brain imaging	UK
113	DATA	In Seok Han	Young Eun Kim, Soo-Won Chea	Development of an Elderly Human Thorax Model Including Internal Organ to Predict Belt Loading Injury	Korea
288	DATA	L Joakim Holmberg	Romain Pannetier, Nagananda K Burra, Thomas Robert, Xuguang Wang	Force-scaling of musculoskeletal models to estimate subject specific maximum isometric joint torque data	France
263	DEN	Marcel Drolshagen	Willi Plett, Susanne Reimann, Ludger. Keilig, Chistoph Bourauel	Construction and Testing of a Device for the Intraoral Measurement of Force/Displacement Characteristics of Teeth	Germany
222	DEN	Dhaneshwar Mishra	Seung-Hyun Yoo, Chang Young Park, Jeong-Wung Rak	Estimation of fracture toughness of human dentine with multiscale modeling	Korea
220	DEN	Yanping Lin	Chen Xiaojun,Ye Ming, Zhang Shilei, Shen Guofang, Wang Chengtao	A pilot application of computer-aided surgical simulation and navigation system in reconstruction of old maxillofacial fractures	UK
301	DEN	Alexei Zhurov	Arshed Toma, Stephen Richmond	Averaging of three-dimensional facial images	UK
198	KNEE	Daniel Watling	Whatling G.M, Holt C.A. and Evans S.L	Comparison of objective classification and subjective waveform analyses for the knee during level gait	UK
170	KNEE	GM Whatling	C Wilson, CA Holt	Kinematic assessment of total knee replacements and natural knees using dynamic fluoroscopy and 3D model registration	UK
50	MOVE	Martin Simoneau	Étienne Guillaud, Jean Blouin	Errors in estimating the dynamic of trunk rotation on reaching accuracy: prediction of a biomechanical model	Canada
224	MOVE	J. Mahmud	Cathy Holt, Sam Evans	Measuring skin strain distribution in vivo using motion capture and finite elements	UK
295	MOVE	Michala Cadova	Miloslav Vilimek	Huxley's vs. Hill's muscle	Prague

				model: determination of muscle forces during movement of lower extremity	
43	MOVE	Charles Pontonnier	Georges Dumont	Interpolating Muscles Forces in an Inverse Dynamics Approach	France
68	MOVE	Eduardo Mendonça Scheeren	Eddy Krueger, Percy Nohama, Guilherme Nogueira-Neto, Vera Lúcia Button	Wrist antagonist contraction movements identification by mechanomyography	Brazil
175	MOVE	Symeonidis Ioannis	Kavadarli G., Schuller E., Peldschus S.	Capturing human motion inside a moving vehicle, that obstructs the camera field of view.	Germany
185	MOVE	Peter Worsley	Mark Taylor, Maria Stokes	Robustness of optimised motion capture and musculoskeletal modelling of Gait	UK
160	MOVE	Natalya Kizilova		Novel mathematical models for analysis of the posturography data and step off from the force platform	Ukraine
187	MOVE	JK Madete	Fuller A, Klein A. , Trueman R , Dunnett S. B., Rosser A.E., Holt C.A.	Quantification of Rat locomotion along beams of varying widths	UK
132	MOVE	Tien Tuan Dao	Philippe POULETAUT, Frédéric MARIN, Marie-Christine HO BA THO	Are muscle force values from literature usable for the musculoskeletal modeling of the lower limbs?	France
190	MOVE	Bagna Maimouna		Modifications in cutaneous reflexes during force field walking in humans	Canada
197	MOVE	Daniel Watling	Whatling G.M, Holt C.A. and Evans S.L	Assessment of hip, knee and ankle biomechanics during stair ascent and descent.	UK
9	NURO	G. Karami	A. R. Syed	A Micromechanical Modeling for Axonal-ECM Interface Characterization Analysis of Brain White Matter	USA
129	NURO	Mario Ortega	María José Rupérez, Jose Antonio Gil, Mariano Alcañiz	Thin plate spline model for brain shift compensation	Spain
270	ORTH	Pramod Kumar Puthumanapully	Martin Browne, Andrew New	Design influences of a short-stemmed and long-stemmed uncemented implant on tissue	UK

				differentiation at the interface: A computational study based on a mechanoregulatory hypothesis	
217	ORTH	Malcom Beynon	Cathy Holt, Gemma Whatling	CaRBS analysis of total hip arthroplasty	UK
119	ORTH	D. Kytyr	J. K. Kunecky, P. Zlamal, O. Jirousek, D. Pokorny	High Resolution Finite Element Modeling of Cemented Bone-implant Interface using X-ray Microtomography	Prague
111	ORTH	Vitins V.	Knets I., Krilova V., Laizans J.	Bond strength of modified cross-linked 3-D polymer structure acrylic bone cement with bone tissue: experimental data and numerical modelling	Latvia
104	ORTH	Won Man Park	Kyungsoo Kim, Yoon Hyuk Kim, Kee Hyung Rhyu	Effect of various realignment osteotomies for slipped capital femoral epiphysis on contact pressure distribution at hip joint	Korea
287	ORTH	André Castro	António Completo, José Simões, Paulo Flores	The Importance of Geometry and Thickness for the Conception of a New Patellofemoral Prosthesis	Portugal
180	ORTH	Brad Miles		Patient specific implant positioning using Multi Objective Optimization techniques and FEA	Australia
14	ORTH	Mehran Moazen	Alison C. Jones, Andreas Leonidou, Zhongmin Jin, Eleftherios Tsiridis, Ruth K. Wilcox	Periprosthetic femoral fracture fixation - A preliminary finite element study	UK
272	ORTH	Yeon Soo Lee	Jun Young Lee, Moongu Jeon	Double screw configuration for fixation of subtalar arthrodesis	Korea
145	ORTH	Kyungsoo Kim	Yoon Hyuk Kim, Won Man Park	Investigation of stress concentration in pedicle screw fixation system with flexible rods by finite element analysis	Korea
53	ORTH	Adrian Pascu	Valentin Oleksik, Radu Fleaca, Deac Cristian and Mihai Roman	Numerical simulation of a femur with osteochondral autologous plug transplantation	Romania
56	ORTH	Chiara Maria Bellini	Davide Romeo, Fabio Galbusera, Silvio Taschieri, Antonios Zampelis, Luca Francetti	Finite element evaluation of implant-supported prosthetic designs in the rehabilitation of edentulous mandibles	Italy
298	ORTH		Muraru L, Creylman	Validation of ankle foot	Belgium

			V, Palari J, Willemsen R, Vander Sloten J, Peeraer L	orthosis finite element models by optical strain measurements	
19	SPIN	Andrea Malandrino	Jerome Noailly, Damien Lacroix	Regional annulus fibre orientations as a tool for the calibration of lumbar intervertebral disc finite element models	Spain
151	SPIN	B Serpil Acar	Behzat B Kentel	Investigating the full spinal curvature changes in the ageing population	UK
203	TISS	M. Pappalardo	B. Bisceglia, R. Cadossi, N. Cappetti, A. De Vita, S. Setti, G.F. Solitro	CAD/FEM techniques for modeling bone behaviour. Electrical stimulation of vertebral cancer tissues	Italy
302	TISS	María José Rupérez		Virtual Suture Threads for Surgery Simulation: a Comparative Study	Spain
207	TISS	Kyehan Rhee	Kyung Jin Chun, Woo Won Jeong	Impinging jet analysis for ergonomic design of skin debis removal	Korea
157	TISS	Pavesi Andrea	Monica Soncini, Alberto Redaelli, Franco M. Montevecchi, Gianfranco B. Fiore	Computational characterization of electrical stimulation in a bioreactor for cardiac tissue engineering	Italy
42	TISS	M. Racila	J.M. Crolet, C.M. Stroe	Link between bony elastic properties and mineral density Role of the architecture ?	France
276	TISS	Badar Rashid		Influence of test conditions on Viscoelastic	Ireland
277	TISS	Julie Motherway		Head impact biomechanics simulations: A forensic tool for resonsructing traumatic brain injury?	Ireland
278	TISS	Julie Motherway		Modeling the impact response of cranial bone	Ireland
24	TISS	Alexandre Delalleau	Lagarde Josse, Labrune,	A fiber-based viscoelastic model for the analysis of skin mechanical properties	France
209	TISS	Piero Pavan	AN Natali, C Stecco, C Venturato	Constitutive modelling of the biomechanical behaviour of the plantar fascia	Italy
124	TISS	Alfonso Gautieri	Simone Vesentini, Alberto Redaelli	Predicting water diffusivity in biodegradable material. An atomistic simulation approach	Italy
211	TISS	Shahrokh Sojaei	Nasser Fatouraee	Numerical Simulation of Heat Transfer within Human Head Model Exposed to Cell-Phone	Iran

Poster Presentations:
Poster presentations will be displayed from Wednesday 8.30am to Friday 4.30pm in Galeria

				Waves	
275	TISS	Aisling Ni Annaidh		Mechanical properties of excised human and porcine skin	Ireland
226	VIRT	Francisco P. M. Oliveira	Todd C. Pataky, João Manuel R. S. Tavares	Registration of pedobarographic images	Portugal
52	VIRT	Jonathan Rogéri	Aledir S. Pereira, Norian Marranghello, Alex F. de Araújo, João Manuel R. S. Tavares	Method for iris recognition based on its internal region	Brazil

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