



Conference Programme



Associação Portuguesa de Mecânica Teórica, Aplicada e Computacional



Co-Chairs:

João Manuel R. S. Tavares (tavares@fe.up.pt)

Renato M. Natal Jorge (rnatal@fe.up.pt)

PROGRAMME

Tuesday, October 13

17:00 – 18:30

Early Registration

Wednesday, October 14

8:00 – 8:45

Registration

8:45 – 9:00

Welcome

Room B032

9:00 – 10:30

Keynotes I

Room B032

Deformable and Functional Models with Applications to Medical Image Analysis

Demetri Terzopoulos

A Novel Self-organizing Principle for Unsupervised Learning: Relevant Information

José Carlos Príncipe

10:30 – 11:00

Coffee Break

11:00 – 12:20

Oral Presentations

Room B032		Room B221	
Chairpersons: <i>Aubrecht Christoph, Hugo Proença</i>		Chairpersons: <i>Robert Marschallinger, Meri Bach</i>	
ORAL I		ORAL II	
11:00 – 11:20	Multicriterion Segmentation for Lung Nodule Detection in Computed Tomography <i>V. O. Campos, R. Q. Feitosa, A. C. Silva, R. A. Nunes</i>	11:00 – 11:20	Nuclear Segmentation for high magnification of histology samples <i>A. Nedzved, V. Starovoitov</i>
11:20 – 11:40	Dental X-Ray: A Data Set of Panoramic Dental Radiographs for Stomatologic Image Processing Purposes <i>João Oliveira, Hugo Proença</i>	11:20 – 11:40	An Interactive System for Content-Based Image Retrieval <i>José Manuel Torres, Luís Paulo Reis, David Hutchison</i>
11:40 – 12:00	Testing various popular segmentation procedures to study the impact on the flow field for a peripheral bypass graft <i>Alberto M. Gambaruto, Alexandra Moura, Adélia Sequeira</i>	11:40 – 12:00	KM and KHM clustering techniques for colour image quantisation <i>M. Frackiewicz, H. Palus</i>
12:00 – 12:20	Spectral Imaging of Retinal Tissue Oxygenation <i>E. Ohel, S. Rotman, D. G. Blumberg, N. Belfair</i>	12:00 – 12:20	On building photographic portraits using statistical techniques <i>Renato Roque, André Puga, Eurico Carrapatoso, F. Barbosa</i>

12:30 – 14:00

Lunch

14:00 – 14:45

Keynotes II

Room B032

From medical imagery to image-based computational physiology

Alejandro Frangi

15:00 – 16:00

Oral Presentations

Room B032		Room B221	
Thematic Session on Computer Vision in Robotics		Thematic Session on Proc. and Classification of Satellite Imagery	
Chairpersons: <i>Luís Paulo Reis, Armando Sousa</i>		Chairpersons: <i>A. Gil, Agustín Lobo</i>	
ORAL III		ORAL IV	
15:00 – 15:15	Model based localization for a mobile robot in an indoor environment <i>Filipe Valente, Mário Ramalho</i>	15:00 – 15:15	Texture analysis of SPOT5 data for land cover mapping on the metropolitan area of Lisbon <i>N. Gaspar J.A. Tenedório L. Dias, T. Santos, J. Rocha</i>
15:15 – 15:30	Obtaining the distance map for perspective vision systems <i>António J. R. Neves, Daniel A. Martins, Armando J. Pinho</i>	15:15 – 15:30	Evaluating the effectiveness of Landsat TM images classification for Pittosporum undulatum mapping in Pico da Vara Protected Area <i>A. Gil</i>
15:30 – 15:45	Real-Time Vision in the RoboCup - Robotic Soccer International Competitions <i>Luís Paulo Reis, António J. R. Neves, Armando Sousa</i>	15:30 – 15:45	High-level geospatial modeling of population patterns for exposure and impact assessment <i>C. Aubrecht, M. Köstl, K. Steinnocher</i>
15:45 – 16:00	Applications of Machine Learning Algorithms for Individual Recognition and Facial Expressions Classification <i>Brígida Mónica Faria, Nuno Lau, Luís Paulo Reis</i>	15:45 – 16:00	Improving spatial and spectral resolution of satellite images <i>Mohamed Abadi, Enguerran Grandchamp, Majdi Khoudair</i>

16:00 – 16:30

Coffee Break

16:30 – 17:00

Posters

Atrium

17:00 – 18:00

Oral Presentations

Room B032		Room B221	
Chairpersons: <i>Thierry Brouard, Pedro Martins</i>		Chairpersons: <i>Arcelina Marques, Filipa Sousa</i>	
ORAL V		ORAL VI	
17:00 – 17:15	Femur surface reconstruction and compression using curved Point-Normal triangles <i>P. Teodoro, P. Pires, J. Martins, J. Sá da Costa</i>	17:00 – 17:15	Handwriting spirals and human hand movement analysis <i>S. M. V. Semedo, F. Vistulo de Abreu, A. Veiga</i>
17:15 – 17:30	Automatic Nuclei Cell Counting in Low-Resolution Fluorescence Images <i>Thierry Brouard, Aurélie Chantôme</i>	17:15 – 17:30	The Effect of Hinged Ankle-Foot Orthoses on the Gait Cycle in Children with Cerebral Palsy. An EMG, Kinetic and Three-Dimensional Kinematical Analysis - Three Clinical Studies <i>A. F. Antunes, J.P. Vilas-Boas, F. Sousa</i>
17:30 – 17:45	A Novel Method to Segment the Levator Ani Muscles in MR Images <i>Zhen Ma, João Manuel R. S. Tavares, Renato Natal M. Jorge</i>	17:30 – 17:45	Biomechanics of handwriting <i>G.M. Azeredo, T. Pereira, M.A. Marques</i>
17:45 – 18:00	A versatile matching algorithm based on dynamic programming with circular order preserving <i>Francisco P. M. Oliveira, João M. R. S. Tavares, T. C. Pataky</i>	17:45 – 18:00	Automatic Detection and Tracking of Handball Players <i>A. Sousa, C. Santiago, L. P. Reis, M. L. Estriga</i>

19:00

Welcome Port of Honour – Buses Departure (from FEUP)

Palácio da Bolsa

Thursday, October 15

9:00 – 9:45

Keynotes III

Room B032

A-contrario detection models
Lionel Moisan

09:50 – 10:30

Oral Presentations

Room B032 Thematic Session on Imaging of Biological Flows Trends and Challenges I		Room B221 Thematic Session on Texture Image Analysis Methods and Applications I	
Chairpersons: <i>Rui Lima, Takami Yamaguchi</i>		Chairpersons: <i>Daniela Iacoviello, Pierluigi Maponi</i>	
ORAL VII		ORAL VIII	
09:50 – 10:10	Diffusion in concentrated suspensions of biological cells <i>T. Ishikawa</i>	09:50 – 10:10	Fractal, multifractal and lacunarity measurement in image texture analysis. A short review. <i>R. Lopes, N. Betrouni, P. Dubois</i>
10:10 – 10:30	Patient-specific blood flow analysis of pulmonary artery affected by severe deformations of the lung <i>J.-J. Christophe, N. Matsuki, T. Yamaguchi, T. Ishikawa, et al.</i>	10:10 – 10:30	Clinical applicability of MRI texture analysis <i>L. Harrison, K.K. Holli, A.-L. Lääperi, S. Soimakallio, et al.</i>

10:30 – 11:00

Coffee Break

11:00 – 12:20

Oral Presentations

Room B032 Thematic Session on Imaging of Biological Flows Trends and Challenges II		Room B221 Thematic Session on Texture Image Analysis Methods and Applications II	
Chairpersons: <i>Rui Lima, Takami Yamaguchi</i>		Chairpersons: <i>Daniela Iacoviello, Pierluigi Maponi</i>	
ORAL IX		ORAL X	
11:00 – 11:20	Motions of particles and red blood cells in a bifurcation: comparison between experiments and numerical simulations <i>M. Lagoela et al.</i>	11:00 – 11:20	Texture analysis of microscopic liver images by a level set approach <i>D. Iacoviello</i>
11:20 – 11:40	In silico multiscale study of the hemodynamics in a human carotid bifurcation model <i>D. Gallo et al.</i>	11:20 – 11:40	Fractal's lacunarity analysis of trabecular bone in RM images <i>A. Zaia, R. Rossi, N. Egidi, P. Maponi</i>
11:40 – 12:00	Influence of blood rheology on bulk flow in carotid bifurcation. A numerical study <i>D. Massai et al.</i>	11:40 – 12:00	Identification of suspicious masses in mammography <i>D. Iacoviello, P. Pellegrini</i>
12:00 – 12:20	Helical blood flow in the human aorta quantified by Phase Contrast MRI <i>U. Morbiducci et al.</i>	12:00 – 12:20	Fast Texture Analysis via Zernike Moments on Graphics Processors <i>Manuel Jesús Martín-Requena, Manuel Ujaldón</i>

12:30 – 14:00

Lunch

14:00 – 15:00

Keynotes IV

Room B032

Dynamic Visualization of the Biomechanics of Pelvic Reflexes
Christos E. Constantinou

15:00 – 16:20

Oral Presentations

Room B032 Thematic Session on Imaging of Biological Flows Trends and Challenges III		Room B221 Thematic Session on Small Animal Imaging Trends and Techniques	
Chairpersons: <i>Mónica S. N. Oliveira, Takuji Ishikawa</i>		Chairpersons: <i>Susana Branco, Béatrice David</i>	
ORAL XI		ORAL XII	
15:00 – 15:15	Numerical Simulation of Blood Flow <i>L.C. Sousa, C.F. Castro, C.C. António</i>	15:00 – 15:15	Photoacoustic Tomography of Small Animals and Organs <i>Markus Holotta, Regina Esterhammer, Pavle Torbica, et al.</i>
15:15 – 15:30	From Medical Images to Simulations: 4D MRI Flow Analysis <i>E. Soudah, J. Penneçot, J. S. Perez, E. Oñate</i>	15:15 – 15:30	Molecular optical imaging of hypoxia using genetic biosensors <i>P. Iglesias, J. A. Costoya</i>
15:30 – 15:45	Flow of a blood analogue solution through microfabricated hyperbolic contractions <i>P.C. Sousa, I.S. Pinho, F.T. Pinho, M.S.N. Oliveira, M.A. Alves</i>	15:30 – 15:45	Evaluation of the respiratory motion effect on small animal PET images <i>S. Branco</i>
15:45 – 16:00	Development of an Image Cleaner Software to eliminate reflections for PIV applications <i>A.A. Pineda-Hernández et al.</i>	15:45 – 16:00	3D volume modeling of fossil small mammal teeth using micro CT and object based image analysis <i>P. Hofmann, R. Marschallinger, G. Daxner-Höck</i>
15:45 – 16:15	Synthetic 4D Phase Contrast MRI datasets: a CFD-based approach for the validation of advanced fluid-dynamics calculations in vivo <i>R. Ponzini, U. Morbiducci, G. Rizzo, M. Cadioli, et al.</i>	15:45 – 16:15	Principles and Scientific Applications and Fluorescent Molecular Tomography for Quantification of Disease Biology In Vivo <i>Sasha Belenkov</i>

16:20 – 16:50

Coffee Break

16:50 – 17:30

Posters

Atrium

17:30 – 18:30

Oral Presentations

Room B032		Room B221	
Chairpersons: <i>Fernao Vistulo de Abreu, Henryk Palus</i>		Chairpersons: <i>Annamaria Zaia, José Torres</i>	
ORAL XIII		ORAL XIV	
17:30 – 17:50	Performance of undecimated filter banks for microcalcifications detection <i>Humberto de Jesús Ochoa Domínguez, et al.</i>	17:30 – 17:50	Effective computer driven tracing of retinal vessel network <i>N. Egidi, P. Maponi, R. Giansanti, A. Zaia</i>
17:50 – 18:10	Automated detection of clustered microcalcifications on mammograms with heterogeneous image properties <i>P. Bosco on Behalf of the MAGIC-5 Collaboration</i>	17:50 – 18:10	A novel approach to the generation of hippocampal templates for the automatic analysis of the hippocampal region <i>M. Aiello, M. Esposito, F. Isgrò, M. Santoro, P. Calvini, et al.</i>
18:10 – 18:30	Volume Measurement and Center Detection of Liver Tumor from CT-Scans <i>T. Ben Said, F. Chaieb, F. Ghorbel, V. Burdin, O. Azaiz</i>	18:10 – 18:30	Automatic segmentation of the optic radiation using DTI in glaucoma patients <i>Ahmed El-Rafei et al.</i>

19:00

Farewell Dinner – Buses Departure (from FEUP)

Graham's Port Wine Lodges

Friday, October 16

9:00 – 9:45

Keynotes V

Room B032

Modeling and Rendering Implicit Surfaces
Joaquim A. Jorge

09:50 – 10:30

Oral Presentations

Room B032		Room B221	
Chairpersons: <i>Jean-Joseph Christophe, Sasha Belenkov</i>		Chairpersons: <i>Manuel González-Hidalgo, Jorge G. Barbosa</i>	
	ORAL XV		ORAL XVI
09:50 – 10:10	Model-based Segmentation and Image Fusion of 3D Computed Tomography and 3D Ultrasound of the Eye for Radiotherapy Planning <i>M. Bach Cuadra, S. Gorthi, F. I. Karahanoglu, F. Salvador, A. Pica, H.P. Do, A. Balmer, F. Munier, J.-Ph. Thiran</i>	09:50 – 10:10	A Robust Edge Detection Algorithm Based on a Fuzzy Mathematical Morphology Using Uninorms (ΦMM-U Morphology) <i>Manuel González-Hidalgo, Arnau Mir Torres, Daniel Ruiz-Aguilera</i>
10:10 – 10:30	Stochastic modelling of diffusion systems. Video image simulation of tubulin diffusion in cytoplasm: a case study <i>Paola Lecca, Lorenzo Dematté, Michela Lecca, Corrado Priami</i>	10:10 – 10:30	Semi-automatic quantification of the epicardial fat in CT images <i>Bruno Figueiredo, Jorge G. Barbosa, Nuno Bettencourt, João Manuel R.S. Tavares</i>

10:30 – 11:00

Coffee Break

11:00 – 12:20

Oral Presentations

Room B032		Room B221	
Chairpersons: <i>Patrick Dubois, William Vaccani</i>		Chairpersons: <i>Eduardo Soudah, Ronald Koop</i>	
	ORAL XVII		ORAL XVIII
11:00 – 11:20	Thresholding of Micro-CT images for morphological analysis of trabecular bone specimens <i>F. Marinozzi, D. Iacoviello, A. Marinozzi, F. Bini, E. Pepe, L. Angeloni, R. Bedini</i>	11:00 – 11:20	Multimodal Optical Imaging: Localization and Quantification of Luminescent and Fluorescent Signals In Vivo <i>Ronald Koop</i>
11:20 – 11:40	Amputee skin deformation maps using Dynamic Roentgen Stereogrammetric imaging <i>G. Papaioannou, G. Fiedler, C. Mitrogiannis, G. Nianos</i>	11:20 – 11:40	Fractal Based Dimensionality reduction of Hyperspectral data using Power Spectrum method <i>Jayanta Kumar Ghosh, Kriti Mukherjee</i>
11:40 – 12:00	Integration of a 3D Medical Visualization System and a Robotic System to Support Orthopaedic Surgery <i>F. Blanco, P.J.S. Goncalves, J.M.M. Martins, J.R. Caldas Pinto</i>	11:40 – 12:00	Referential Geometrical Entities for Reverse Modeling of Geometry of Femur <i>M. Stojkovic, M. Trajanovic, N. Vitkovic, J. Milovanovic, S. Arsic, M. Mitkovic</i>
12:00 – 12:20	An analysis on segmentation methods for skin lesions <i>Alex F. de Araújo, Aledir Silveira Pereira, Norian Marranghello, Tiago Dócusse, João Manuel R. S. Tavares</i>	12:00 – 12:20	A three-dimensional geometric model of a hip joint presenting a femoral head deformity based on radial magnetic resonance arthrography images <i>D.S. Lopes, J.P. Jorge, E.B. Pires, F.M.F. Simões, P.A. Rego</i>

12:30 – 12:45

Closing

Room B032

12:45 – 14:00

Lunch

15:00 – 23:00

Tour of The Douro Valley, A Wine Experience
 (needs extra registration)

Posters

Error Analysis on Curvature-Based Crest Lines Extraction on Iso-Surface of Medical CT Data

Iman Yi Liao, Pan Zheng, Bahari Belaton

A complex network approach to texture applied to medical image classification

Wesley Nunes Gonçalves, Bruno Brandoli Machado, João do E. S. B. Neto, Odemir Martinez Bruno

Analysis of the Fibers Direction in the Tympanic Membrane

C. Garbe, F. Gentil, M. P. L. Parente, P. Martins, R. M Natal Jorge, S. Santos

Construction of a 3D Model from Medical Images: Application to knee joint

H. Mata, R. Natal Jorge, S. Santos, A. Sousa, F. Raposo

X-ray micro-imaging of various bio-fluid flows

S. J. Lee

Construction of a 3D model for the female pelvic organs

A.J.C. Arteiro, M.P.L. Parente, R. M. Natal Jorge, A.A. Fernandes, T. Mascarenhas

Geometric analysis of female pelvic floor muscles by using manual segmentation

T.H. Da Roza, R. Natal Jorge, M. Parente, João Manuel R. S. Tavares, C. Saleme, M.P. Barbosa, A.L.S. Filho, T. Mascarenhas, J. Loureiro

3D Reconstruction of Human Temporomandibular Structure

V. L. Trindade, R. Natal Jorge, S. Santos

Comparison between Kalman and Unscented Kalman Filters in Tracking Applications of Computational Vision

Raquel R. Pinho, João Manuel R. S. Tavares

Anatomic model study of a patient with muscular dysfunction on lower limbs

D.M. Correia, J.A. Araújo, R.S. Pinho, M.A. Marques

Dynamic evaluation and comparative analysis in ballet step sequences using “OpenSim”

C.G. Silva, M.V. Almeida, M.A. Marques

Simulation of a frontal kick using SIMTK

N.T.P.A. Fernandes, M. Andrade, M.A. Marques

Fusion of High Spatial and Spectral Resolution CBERS-2B data for a Better Knowledge of Urban Area in South Portugal

A. M. Santos, J. P. Monteiro, R. Hugman, E. R. S. Santos

Validation of a complete human model using gait simulation

N.M.J. Oliveira, I.M.S. Vieira, M.A. Marques

Finite Element Modeling of Scaffolds for Minor Maxillofacial Bone Augmentation

F.V. Antunes, M.C. Gaspar, A.I. Silva, C. Calado, J. Julião

Determination of the cell-free layer in circular PDMS microchannels

T. Cerdeira et al.

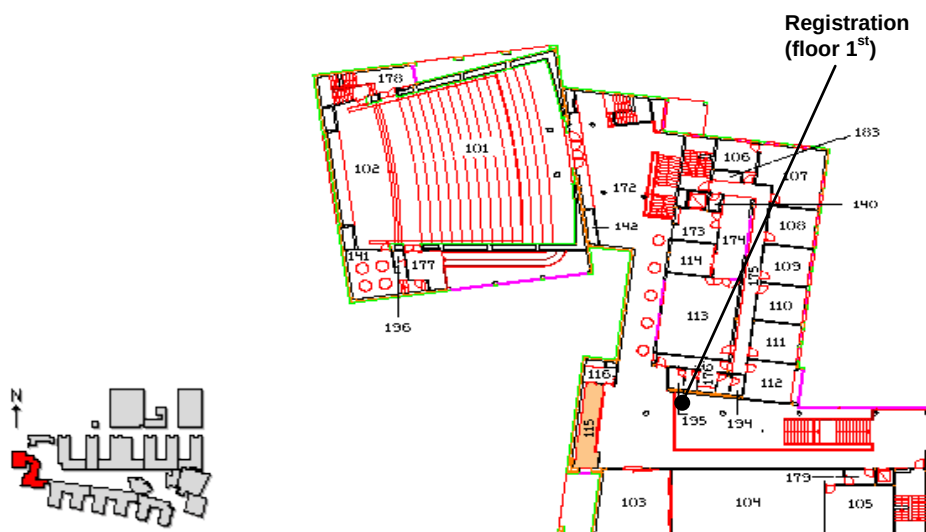
Segmentation of Thermal Liver Lesions for CT-Based Radiofrequency Ablation Assessment

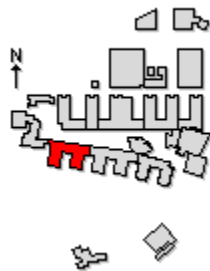
Jan Hendrik Moltz, Benjamin Geisler, et al.

Local & Rooms

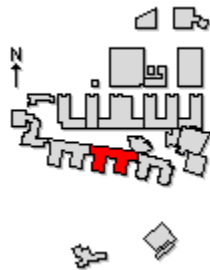
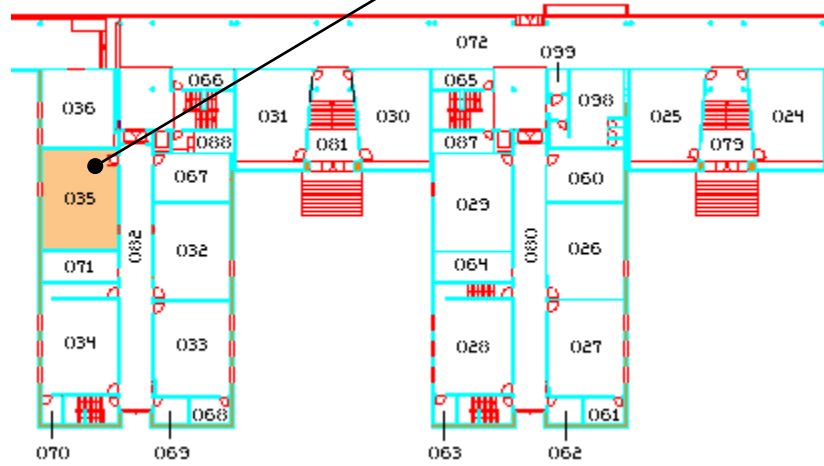


Faculdade de Engenharia da Universidade do Porto
Rua Dr. Roberto Frias, s/n
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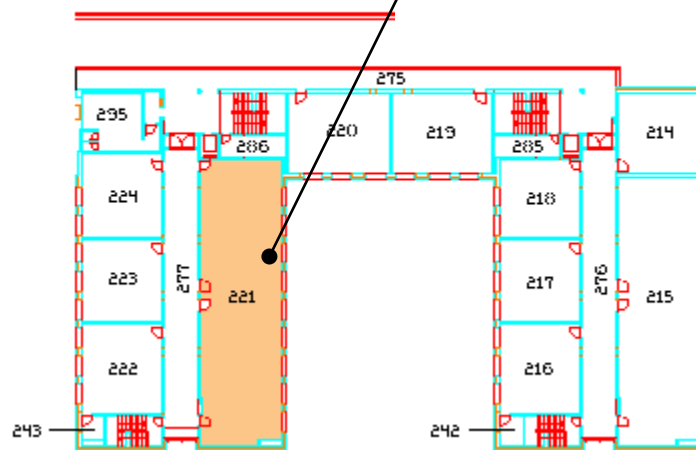




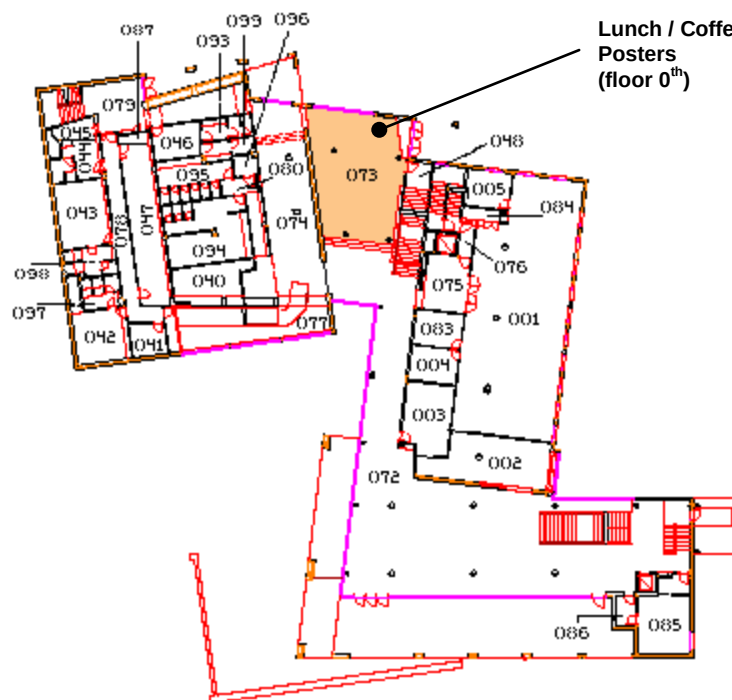
**Oral Room I – B035
(floor 0th)**



**Oral Room II – B221
(floor 2nd)**



**Lunch / Coffee Break
Posters
(floor 0th)**



Internet Access

Wireless Access

Network ID: guest-eduroam

login: vipimage

password: vipimage2009

FEUP Computer Rooms (desktop computers)

login: frm00332

password: iXPG4wgqj

SOCIAL PROGRAMME SCHEDULE

Wednesday, October 15

19h00 – Transfer from FEUP to “Palácio da Bolsa”

19h30 – Arrive to “Palácio da Bolsa” and begin of the guided tour

20h30 – Cocktail service

21h30 – Return to FEUP (passing by the hotels associated)

Thursday, October 16

19h00 – Transfer from FEUP to Graham’s Port Wine Lodges

19h45 – Arrive to Graham’s Port Wine Lodges, begin of the guided tour to the wine lodge and tasting of three of Graham’s very fine Ports – Graham’s White Port, LBV and 10 year old Tawny

21h00 – Dinner service

23h00 – Return to FEUP (passing by the hotels associated)



“Palácio da Bolsa”
Rua Ferreira Borges
4050-253 Porto



Graham’s Port Wine Lodges
Rua Rei Ramiro 514
4400-088 Vila Nova de Gaia