

Trabecular Bone Characterization: New trends and challenges

Thematic Session within VipIMAGE 2013

IV ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing

Melia Madeira Mare Hotel, Funchal, Madeira, Portugal, 14-16 October 2013

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Description

The current aging of worldwide population has turned osteoporosis into a prevalent disease. The bone mass loss due to this disease brings about several health problems, being fractures a deep consequence, with a high cost for healthcare systems. The trabecular bone has shown to be quite important to the whole structural quality of the scaffold. Several aspects of the trabecular bone have been investigated, most of them currently taking advantage of non-invasive data obtained by CT, microCT, MRI and HR-pQCT images and QUS for *in vitro* or *in vivo* subjects. The advances in this specific area related to bone tissue characterization have been quite fast and new challenges are demanding new interdisciplinary research, for modelling, simulations and experimental essays with the support of clinical analysis by physicians.

A thematic session on this topic will provide an extremely rich environment and opportunity to get together the community that works in this topic to bring the current advances and perspectives. On the other hand, as the main event is devoted to research development in visualization and medical image processing, this will be a great time to exchange knowledge and information with colleagues that are working on close related aspects and technologies. We wish to share this thematic session with worldwide researchers who are interested in a broad view of bone characterization, with particular attention, but not exclusive, to the trabecular bone structure.

Topics of interest include (but are not restricted to):

- Assessment of trabecular bone structure
- Trabecular bone modelling
- Bone quality and fracture risk
- Mechanical competence of bone structure
- Finite element method to bone structural simulations
- Mechanical testing methodologies
- Detection and description of bone lesions
- Bone aging and remodelling
- 3D Reconstruction and visualization techniques
- Computer assisted procedures in the treatment of bone pathologies

Publications

The **proceedings book** will be published by the **Taylor & Francis Group**, and indexed by **Thomson Reuters Conference Proceedings Citation Index, IET Inspect and Elsevier Scopus**.

A book with 20 invited extended works from the most important ones presented in the conference will be published by Springer under the book series "[Lecture Notes in Computational Vision and Biomechanics](#)".

A dedicated special issue of the Taylor & Francis International Journal "[Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization](#)" will be published with extended versions of the best works presented in VipIMAGE 2013.

Important dates

- **Submission of extended abstracts: April 15, 2013**
- Authors Notification: May 1, 2013
- Final Papers: July 1, 2013

Organizers

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