

# **Simultaneous MR-PET imaging**

*Thematic Session within VipIMAGE2011*

*III ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing*

*Olhão, Algarve, Portugal, 12-14 October 2011*

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## **Description**

In the last few years there has been increasing interest in hybrid MR-PET scanners. These scanners would allow acquiring morphological and metabolic information in one single imaging session, complementary to PET-CT systems. Several groups have been developing pre-clinical scanners for the study of small animals. Some of these prototypes utilize innovative solid-state electronics such as Avalanche Photodiodes (APD's) or Silicon Photomultipliers as a replacement for magneto-sensitive photomultipliers. Recently, the development of full-body MR-PET solutions is being pursued by all major medical imaging market players. The ability to produce fully registered MR-PET data opens new and exciting roads for better understanding of biological and physiological processes in living beings. The first studies demonstrating the advantages of simultaneous MR-PET measurements have already been published and demonstrate the feasibility and interest of this new approach. In spite of this, MR-PET is still challenging as an imaging tool. Research is still evolving in the contexts of image acquisition and corrections and specially related to attenuation correction and MR-based PET image reconstruction. The aim of this thematic session is thus to present and discuss hardware and software developments for preclinical and clinical applications using simultaneous MR-PET.

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

- Development and applications of small animal MR-PET scanners
- Human MR-PET scanner prototypes
- Issues on quantitative PET in MR-PET hybrid imaging
- Image reconstruction and data processing techniques in MR-PET
- Development and test of improved MR-compatible PET components
- Future MR-PET scanners using ultra-high magnetic fields

## **Publications**

The **book of proceedings will be published by Taylor & Francis Group**. The organizers will encourage the submission of extended versions of the accepted papers to related International Journals; in particular for special issues dedicated to the conference.

A **book with 20 invited extended works** from the most important ones presented in conference will be **published by SPRINGER**.

## **Important dates**

- **Submission of extended abstracts: March 15, 2011**
- Authors Notification: April 15, 2011
- Lectures and Final Papers: June 15, 2011

## **Organizers**

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