Contribution ID: **61** Type: **Talk**

Next-generation breast cancer PET-MR imaging with HYPMED: System and workflow design

Monday, 21 May 2018 10:10 (20 minutes)

Breast cancer is a leading cause of cancer death in women and a major socio-economic issue. With currently available methods, early diagnosis frequently fails. Moreover, beyond mere detection, there is an ever-increasing need for improved non-invasive characterisation of cancer. Targeted therapies require an in-depth analysis of cancer to select and guide appropriate treatment. Both, PET and MRI can provide molecular and functional information that may be of pivotal importance for tailoring therapy. However, current whole-body PET/MRI systems lack the necessary sensitivity and resolution for this task. HYPMED addresses this by engineering an innovative multimodal imaging tool. HYPMED will integrate a fully-digital MRI-transparent PET-detector into a novel multi-channel PET-transparent MRI surface coil. The PET-RF insert will allow unprecedented imaging of breast cancer with high-resolution/ultra-high sensitivity PET, combined with high-level structural and functional MRI, and allow minimal-invasive MRI- and PET-guided targeted biopsy. This presentation focuses on the unique system and workflow design solutions implemented in HYPMED, which will enable next-generation clinical imaging for the discovery and diagnosis of breast cancer.

Primary author: SCHAART, Dennis (Delft University of Technology)

Co-authors: Dr SALOMON, Andre (Philips Research); Dr WEISSLER, Björn (RWTH Aachen); Prof. KUHL, Christiane (RWTH Aachen); Dr SCHUG, David (RWTH Aachen); Mr KUZNETSOV, Dimitri (Delft University of Technology); Dr BROWN, Jeremy (Delft University of Technology); Mr KOELEMAN, Jeroen (Futura Composites BV); Mr KAMMAN, Kevin (Delft University of Technology); Mr DE KONING, Marcel (Futura Composites BV); Mr BORGO, Martino (Futura Composites B.V); Mr GROSS-WEEGE, Nicolas (Department of Physics of Molecular Imaging Systems, Institute for Experimental Molecular Imaging, RWTH Aachen University, Germany); Dr GEBHARDT, Pierre (RWTH Aachen); BAKKER, René (Delft University of Technology); Dr AUSSENHOFER, Sebastian (Noras MRI Products); Ms NOLTE, Teresa (Philips Research Europe/RWTH Aachen); Dr DEY, Thomas (RWTH Aachen); Mr CELIK, Turgay (NORAS MRI products GmbH); Prof. SCHULZ, Volkmar (Department of Physics of Molecular Imaging, Institute of Experimental Molecular Imaging, RWTH-Aachen University)

Presenter: SCHAART, Dennis (Delft University of Technology)

Session Classification: Session 1 - Brain and organ specific systems