Vrije Universiteit Brussel

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Dr. Arkadiusz Sitek (Philips Research, Cambridge, Massachusetts) will give a conference

# "Beyond Poisson Model in Nuclear Imaging Data Reconstruction and Analysis".

Dr. Arkadiusz Sitek received his PhD in Physics from the University of British Columbia, Canada, and since 2001 worked as an imaging scientist in the Lawrence Berkeley National Laboratory, Beth Israel Medical Center, and Brigham and Women's Hospital before joining Massachusetts General Hospital and Harvard Medical School in 2012. He recently moved to Philips Research in Cambridge (Massachusetts). His main research concerns random processes and application of Bayesian principles to study uncertainty in decision problems found in medicine. He is the author of the book "Statistical Computing in Nuclear Medicine" published by CRC Press in 2014. See http://gordon.mgh.harvard.edu/gc/ArekWeb/main.html

Abstract:

Statistical approaches to image reconstruction in nuclear imaging have been developed in the last thirty years based on the assumption of the Poisson statistics of imaging data. This assumption stimulated successful developments of many algorithms that transformed the nuclear imaging field and are currently used for the image reconstruction in the state-of-the-art clinical scanners. However, the assumption of Poisson statistics is a simplification of a fully-discrete (FD) description of the nuclear data. In the presentation, the FD statistical description is introduced and new algorithms for image reconstruction and nuclear imaging data analysis are derived and discussed. The FD model offers many unexplored opportunities for the significant advancement of the data analysis in nuclear imaging.

Date: Monday September 19, 2016 at 4 pm.

Place: Medical Campus of the Vrije Universiteit Brussel, Building A, Auditorium 5.

Map:
http://www.vub.ac.be/sites/vub/files/campus/plans_VUB_Jette_NL_2015_nieuwe_layout.pdf

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