

## Mid-Congress-Symposium 2

Physics + Dosimetry Committee

Monday, October 26, 09:30-12:15

### Session Title

**Artificial Intelligence in Image Acquisition, Reconstruction and Processing**

### Chairperson

John Dickson (London, United Kingdom)

### Programme

09:30 - 09:58 Andrew Reader (London, United Kingdom): AI in Image Reconstruction

09:58 - 10:23 Jae Sung Lee (Seoul, Republic of Korea): AI for Image Corrections

10:23 - 10:43 Dimitris Visvikis (Brest, France): AI and Imaging Biomarkers

**10:43 - 10:58 Break**

10:58 - 11:23 David Sarrut (Lyon, France): AI for Monte Carlo Simulations

11:23 - 11:48 Julien Bert (Brest, France): AI for Dosimetry Applications

11:48 - 12:13 Martina Sollini (Milan, Italy): Potential Clinical Applications of AI in NM

### Educational Objectives

1. Learn about the latest developments in the use of artificial intelligence for image formation (image tomographic reconstruction and associated corrections)
2. Become familiar with the latest developments in the application of artificial intelligence in the field of image processing, MC simulations and dosimetry applications
3. Learn about the potential applications of artificial intelligence in clinical Nuclear Medicine practice

### Summary

The evolution of machine learning approaches with the introduction of deep learning techniques, has led to an exponential increase in the use of Artificial Intelligence (AI) in a variety of application areas, including the healthcare field. Within this context, AI has been introduced at different steps of medical imaging, covering the simulation of imaging devices, image formation including tomographic reconstruction and image related corrections to image processing for the subsequent exploitation of reconstructed images. The latest advances in all of these fields will be covered during this pre-congress symposium, aiming to also provide an insight on the potential interest of AI from a clinical perspective.

### Key Words

Artificial intelligence, image processing, image reconstruction, radiomics, Monte Carlo simulations, dosimetry, clinical applications