

**First Mediterranean Thematic Workshop on Advanced Molecular Brain
Imaging with Compact High Performance MRI-Compatible PET and SPECT
Imagers –Potential for a Paradigm Shift**

Contribution ID: 39

Type: **not specified**

Partial volume effect (PVE) issue: instrumental and biological components

Friday 31 August 2012 09:10 (25 minutes)

Abstract. In the continuing efforts towards accurate quantification in PET and SPECT, partial volume effect (PVE) remains an extremely challenging issue. PVE is not only caused by the limited spatial resolution in PET and SPECT images, but also by the unavoidable sampling of the images into matrices of voxels. PVE results in biased measurements, with bias depending on many factors related not only to the spatial resolution and sampling of the imaging device, but also to the size, shape and contrast of the tissues of interest and neighboring tissues. As most other factors degrading SPECT and PET quantification are now well compensated for, PVE is now gaining a lot of attention. Many corrections have been proposed to tackle PVE, first for brain imaging, but also for cardiac and tumor imaging. This presentation will explain PVE, and give an overview of the current strategies to cope with PVE. The applicability of these methods to various situations will be discussed, as well as how recent advances in detector technology and software can be taken advantage of to reduce errors caused by PVE.

Presenter: Dr BUVAT, I.

Session Classification: Reconstruction