

## Effect of Spatial Resolution on ZTE-based Attenuation Correction

*Tuesday, 22 May 2018 18:40 (20 minutes)*

In brain PET/MR, the zero echo-time (ZTE) pulse sequence has already been shown to be a valuable tool to derive pseudo-CT and attenuation correction maps thanks to its ability to capture the short T2\* signal from bone tissue. Most studies in this area have used a moderate resolution (2.4 mm) to minimize the acquisition time in a generic clinical setting and few studies have used a high resolution (1.6 mm). The aim of the present study is to assess if a higher resolution ZTE is useful to generate more accurate pseudo-CTs and attenuation maps and hence to reduce PET quantification error. These results indicate that the increase of resolution allows to further reduce the PET quantification error compared to the moderate resolution ZTE, in particular in the cerebellum. This comes with a two-fold increase of the acquisition time. While the performance of the fast ZTE method with moderate resolution should be sufficient for most basic clinical applications, advanced PET/MR brain studies may benefit from the additional accuracy of high resolution ZTE.

**Primary author:** FERNANDEZ, Brice (GE Healthcare)

**Co-authors:** Dr COMTAT, Claude (CEA, INSERM, CNRS, Université Paris-Sud, Université Paris Saclay, CEA-SHFJ); Dr DELSO, Gaspar (GE Healthcare); Dr BUVAT, Irène (CEA, INSERM, CNRS, Université Paris-Sud, Université Paris Saclay, CEA-SHFJ); Dr KHALIFÉ, Maya (Institut du Cerveau et de la Moelle épinière (ICM)); Mr SOUSSAN, Michael (CEA, INSERM, CNRS, Université Paris-Sud, Université Paris Saclay, CEA-SHFJ)

**Presenter:** DELSO, Gaspar (GE Healthcare)

**Session Classification:** Session 9 - Software and Quantification: attenuation correction –part 2