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Towards total-body J-PET: overview of data correction techniques for image reconstruction

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Positron Emission Tomography (PET) is a widely employed medical imaging technique that uses radiotracers to visualise various metabolic processes. PET functions by detecting gamma rays resulting from the decay of the radiotracer in the patient body. The acquired data are then utilised to reconstruct an image representing the initial radiotracer distribution. However, numerous effects, including accidental coincidences, photon scattering or positron range, affect the data in ways that cause artefacts in the reconstructed image. A number of data correction techniques exist to compensate for these undesired effects and produce images of satisfactory quality. This talk will review existing techniques, with a focus on the total-body Jagiellonian PET, a prototype of a long-AFOV PET system that uses plastic scintillators currently under development at the Jagiellonian University in Poland.

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