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Application of innovative technologies in PET imaging

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Total-body PET scanners impose elevated requirements on data processing systems. Considering significant increase of the number of data channels and the resolution of this data questions arise if the classic computing platforms are still suited for imaging.

Field Programmable Gate Arrays (FPGA) are relatively new devices that can break the hegemonie of CPUs and GPUs in high performance computing systems. They offer unique capabilities like true-real-time processing, natural parallelism and vast amount of computing resources enclosed in a single chip.

The talk will focus on application of FPGA devices in the entire data processing pipeline of a PET scanner: from digitized signal to the reconstructed image.

Primary author: KORCYL, Grzegorz (Jagiellonian University) Presenter: KORCYL, Grzegorz (Jagiellonian University)

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