

# 3rd International Workshop on Machine Learning and Quantum Computing Applications in Medicine and Physics



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## Architectural challenges when serving heterogenous HPC and AI applications at CIŚ

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We describe main application areas served at Świerk Computing Centre, a supercomputing facility of NCBJ. These include nuclear reactor simulations and design, high energy physics, astrophysics, material science, FEL science, chemistry and drug design, power grid simulations - HPC supplemented with AI for most of the mentioned cases. These applications implement completely different computing models and thus have different, often contradicting architectural requirements. Here we show how we deal with these conflicts, while trying to maintain elasticity in resource usage and reasonable investment and operational costs.

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