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GEANT4-based simulation of a micro-CT scanner using cloud resources

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Research of methods of material recognition using Medipix-based micro-CT scanner MARS requires detailed simulation of passage of X-rays through the sample. The application based on the Geant4 toolkit has been developed to solve this task. Since the computation turned out to be very time consuming for a single PC (several hunderds of projections must be simulated for each sample) the cloud resources has been used. A job submission framework optimized to run Geant4 applications in Amazon EC2 has been implemented using Python language. The obtained results and performance of the simulation will be reported.

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