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Simulation Studies for Muography of the Pyramids

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Muography is an technique that can image objects by tracking cosmic-ray-produced muons, which are unstable leptonic particles with a mass of 207 MeV and a mean lifetime 2.2 μs. Muography ispotentially useful for discovering voids inside the Great Pyramids. Our computer simulation of muography focus on studying the great Pyramid, "Khufu,"to discover voids inside it using an advanced muon detector designed with a suitable geometry that measures the angular dependence of the cosmic muon flux inside the pyramid. The simulation results will be validated using previous simulations. This will be useful for developing an algorithm that can also be used for discovery within the second great pyramid, "Khafre".

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