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Meiga, a dedicated framework used for muography applications

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The design and development of detectors for muography is in constant demand of the usage of semiempirical models and simulations. In this contribution we present *Meiga*, a framework conceived for simulation and reconstruction of muography applications. This framework takes a simulated muon flux at ground level and propagates it through a given material where the detectors are located. It uses Geant4 as a toolkit for the simulation of traversing particles through the material and computes the signal produced when muons pass through any type of detector at the desired location. Both, simulated and reconstructed data are stored for an offline analysis. Meiga encompasses the need of simulating different scenarios to optimize detector design in a versatile and easy-to-use framework. In this contribution, we present the methods for simulating scintillator-based detectors intended for muography studies in addition to first results of validation with prototype detectors.

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