

# Simulating the signal of the AMIGA underground detectors of the Pierre Auger Observatory

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In this work, we present a detailed description of the simulation development and validation of the underground detector signal for the Auger Muons and Infill for the Ground Array (AMIGA), a low-energy enhancement at the Pierre Auger Observatory. To this aim, the detection system was thoroughly characterized in the laboratory. It consists of plastic-scintillator strips with optical fibers that conduct light towards silicon photomultipliers whose output is then processed with two complementary read-out channels. These measurements allowed us to design a fast and reliable simulation chain that fully reproduces the signal of single muons impinging on the scintillators.

## Keywords

## Collaboration

## other Collaboration

## Subcategory

Experimental Methods & Instrumentation

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