

# Muon tomography with multiplexed Micromegas detectors using compact telescopes for societal applications

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Muon tomography has emerged as a powerful technique for non-invasive imaging in various fields, including nuclear security, geology, and archaeology. For ten years, genetic multiplexed resistive Micromegas (MultiGen) detectors, invented at CEA/Irfu, have been developed for muon tomography, aiming to enhance imaging resolution and efficiency. MultiGen detectors provide telescopes with high spatial resolution, and a low number of electronic channels, making them suitable for deployment in various experimental environments, including those encountered in projects like ScanPyramids and nuclear dismantling.

After describing our effort to optimize the MultiGen-based telescopes, our contribution in ScanPyramids project and the first three-dimensional muon tomography of a nuclear reactor will be presented. A sustained effort was also made to produce MultiGen detectors in a French PCB company.

Future projects on nuclear dismantling for non-destructive inspection and imaging will be presented.

## Alternate track

1. Detectors for Future Facilities, R&D, Novel Techniques

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Yes

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