

Gaseous Tracking Detectors at the Sakurajima Muography Observatory

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Muography

Cosmic particles
→ atm. high E coll.
→ hadron showers
→ pions → **muons**.

Large E range,
highly penetrable

Density*Length ↔
Muon Flux

Muography: imaging
via cosmic muons

Geology, Volcanology,
Speleology, Mining,
Industrial
applications, ...

Volcanos, Sakurajima



Volcano muography
novel insight
structure details

Japan, Italy, France,
Hungary, ...
Virt.Muogr.Inst.

Technologies:
Emulsion,
Scintillators,
GasD.: RPC, MM,
Mod.MWPC, ...

Can be applicable for
eruption forecast?

Modified MWPC as MMOS

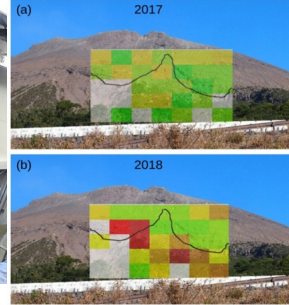
Muography detectors

Tracking system,
High resolution,
Field-application,
Variable environment,
Safe and stable operation,
Moderate-Large systems

Modified MWPC

Simple construction,
Sense+Field+Pad wires,
Lightweight: no robust frame,
Resolution ~1cm,
Digital electronics,
Tracking via 8-points,
Modules ~ 1m² *8,

SMO - Sakurajima Muography Observatory



Shed for detectors: MMOS + SMOS,
gas system: low consumption, Power

Largest muography experiment

11 MMOS ~ 9m² (*8 MWPC) for years

Measured proof for volcanic plug formation

References

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