

## Basics

**Muography:** Muography: A group of density imaging techniques based on the detection of cosmic-ray induced muons

**Applications:** Archaeology, architecture, border control, tunnels, caves, containers, nuclear waste imaging, volcanology, hydrology, geology, mineral exploration, mining, oceanography, etc.

## Current trends

- The term ‘muography’ is stabilising
- Applications spreading out
  - First-wave applications (e.g., border control, volcanoes) reaching early-stage maturity (i.e., recognition)
  - Second-wave applications (e.g., civil engineering, caves, mining) gaining momentum
  - Third-wave applications under piloting (e.g., oceanography)
  - Future applications proposed in the literature (e.g., planetary research)
- Cross-pollination between different disciplines continues to intensify as muography is developing from multidisciplinary research to a truly transdisciplinary research field

## An analysis based on Web of Sciences

- Search words: muograph\* OR muon radiograph\* OR muon tomograph\* OR muon scattering tomograph\*
- 556 publications found
- Oldest paper from 1987 (in Russian), but the earliest papers were not found (e.g., George, 1955)
- Every year after 2001 is represented by more than one publication
- Peak year so far: 2019 (68 counts)

