

**Session Program**

1-5 Jun 2026

**Muographers 2026**

***Data Processing and Simulation Methods***

## Tuesday 2 June

10:30

### Data Processing and Simulation Methods

Session | Location: Mercure Budapest Castle Hill 41-43 Krisztina Korut, Budapest, 1013 (GPS: 47.498822, 19.027326)

#### 10:30–10:50 GEANT4 Simulations of Muon Scattering Tomography

**Speaker**

Konstantin Borozdin

#### 10:50–11:05 Monte Carlo study of muon scattering tomography using RPC-based detectors

**Speaker**

Maria-Fernanda Heredia-Moyano

11:05–11:20

#### Task-Driven Differentiable Optimization of Muon Scattering Tomography for Anomaly Detection

**Speaker**

Zahraa Zaher

#### 11:20–11:35 Reducing Imaging Times in Muon Tomography Using Deep Learning

**Speaker**

William O'Donnell

#### 11:35–11:50 An algorithm to localize position indicators using atmospheric muons

**Speaker**

Mr Johann Wolf

11:50

13:00

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#### 13:15–13:30 Industrialised strategies for centimetre precision muon scattering muography

**Speaker**

Dr Fabio Dogliotti

#### 13:30–13:45 B2X - Seamless integration of complex 3D scenes with Monte Carlo frameworks

**Speaker**

Felix Sattler

#### 13:45–14:00 Efficient Muon Tomography Image Reconstruction Using Gradient Descent Optimization

**Speaker**

Jean-Marco Alameddine

#### 14:00–14:15 Experiences with tomographic inversion of subsurface muographic measurements

**Speaker**

Laszlo Balázs

#### 14:15–14:30 ARTI-muon: fast muography simulations using generative models

15:00

**Speaker**  
Rafael Armando Martinez Rivero

**14:30-14:45 Geometric Errors and Performance Limits in Muography Detectors**

**Speaker**  
Mr Mauricio Echiburu Fuenzalida

**14:45-15:00**

**CMOS Cosmic Ray Detector (CCRD): A desktop muon detection software for citizen science**

**Speaker**  
Katsiaryna Katrankova

15:20

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**15:20-15:35 Geant4-based simulations for muon imaging of volcanoes**

**Speaker**  
Daria Gracheva

**15:35-15:50 From raw data to muon tracks: the MURAVES Data Processing Framework**

**Speaker**  
Alice Biolchini

**15:50-16:05**

**Precision parameter analysis based on a series of measurements conducted at the Jánossy Underground Laboratory**

**Speaker**  
Boglárka Abigél Stefán

**16:05-16:20 Physics-informed  $\mu$ TRec algorithm for accelerated muon scattering tomography**

**Speaker**  
Reshma Ughade

**16:20-16:35**

**Comparison of muon trajectory reconstruction methods with detailed track simulations for track reconstruction optimization**

**Speaker**  
Prof. Adam Hecht

16:35