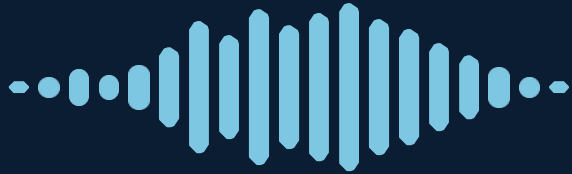


Two Sciences, One Earth Event

SEISMOLOGY



Ground Motion Records

P-wave & S-wave Analysis

Source Characterisation

Site Attenuation Models

THE GAP

?

EARTHQUAKE ENGINEERING



Structural Response Data

Interstory Drift & Damage

Site Amplification Effects

Performance-Based Design

Data-Driven Interpretation of Structural Seismic Response for Interdisciplinary Seismology Applications

POSTER SESSION

Mazllum Kamberi

FuSe Training School 2026 — Tihany

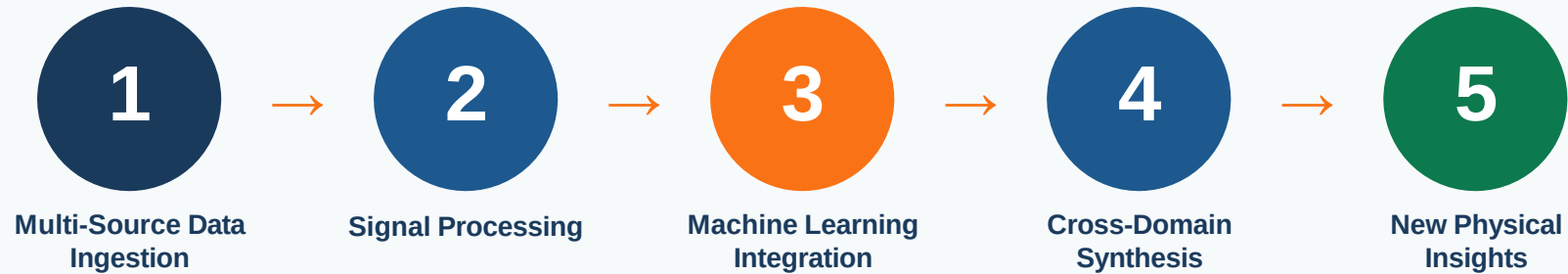


Same earthquake — different data, different models, rarely integrated

The Data-Driven Framework

Integrating seismological and engineering datasets to uncover new physics

THE PIPELINE



INTERDISCIPLINARY COMMUNITY



Seismologists

Ground motion, source physics, wave propagation



Data Scientists

Machine learning, feature extraction, integration



Engineers

Structural response, damage, vulnerability models

From Corfu to Tihany



Corfu

FuSe 2026 Conference
April 27–30, 2026

FOUNDATION

CONCEPTUAL & THEORETICAL BASIS

Identified the gap between seismological and earthquake-engineering interpretations of the same event, and argued for cross-disciplinary data integration as a path toward deeper physical understanding.

- Gap analysis: two sciences, one earthquake, separate data streams
- Conceptual case for a data-driven integration framework

NEXT
STEP



POSTER
SESSION



Tihany

FuSe Training School 2026
September 7–11, 2026

THIS WEEK

PROPOSED FRAMEWORK — EARLY STAGE

This poster proposes a structured data-driven pipeline (seismic input → ML/AI models → physics interpretation) as an early-stage research direction. No experimental results are reported.

- 5-step pipeline: data → features → ML → structural response → physics
- Roadmap: standardised protocols → data collection → monitoring networks

Come and See the Full Framework at the Poster

Conceptual pipeline, roadmap, and open questions — let's discuss and collaborate.

POSTER SESSION

Mazlum Kamberi

FuSe Training School 2026 — Tihany