

IWX2025 Program

The 10th International Workshop on X-Ray Tomography of Geomaterials and Environmental Materials

Dates: December 2–3, 2025

Venue: Room 225, Building No. 2, Faculty of Engineering, Kumamoto University
(Kurokami South Campus, Building No. 64 on the campus map)

Google Map: <https://maps.app.goo.gl/iRQQFt8d19V8K5cCA>

Campus map: https://www.kumamoto-u.ac.jp/campusjouhou/map_kurokami_2

Organizer: X-Earth Center, Kumamoto University

Day 1 – Tuesday, December 2, 2025

Time: 13:00–17:50

Session Chair: Daiki Takano (Secretary General, IWX2025)

Session 0 – Opening

13:00–13:20 Opening Remarks

Jun Otani (Executive Vice-President, Research and Global Strategy, Kumamoto University)

Toshifumi Mukunoki (Chair, Kumamoto University)

Introduction of X-Earth Center

Session 1 – Keynote Presentations

13:20–14:00 Neutron and X-ray Tomography for the Study of Porous Media
Alessandro Tengattini (3SR Laboratory, Université Grenoble Alpes, France)

14:00–14:40 3D insight to 4D behavior on frozen soil tentative
Mahya Roustaei (Ghent University, Belgium)

14:40–15:00 Coffee Break

Session 2 – Oral Presentations 1 (Student Session 1)

Session Chair: Nana Yamaguchi

15:00–15:20 Study on Drainage and Imbibition Mechanism in Scanning Curve of Soil
Water Characteristic Curve
Shuta Fuchisaki (Kyoto University)

15:20–15:40 Development of a Theoretical Water Retention Curve Model with Hysteresis Using X-ray Micro-CT Observations
Shizuka Eshiro (Kyoto University)

Session 3 – Oral Presentations 2

Session Chair: Toshifumi Mukunoki

15:45–16:15 Microstructural Study of Aso-4 Sand Compressibility Using X-ray CT
Takayuki Yamashita (Kumamoto University/ Kiso-Jiban Consultants)

16:15–16:45 Three-Dimensional Characterization of Microstructural Evolution and Strain Localization in Sand Under Large Deformations Using X-ray CT–Based Ring Shear Experiments
Shintaro Nohara (Central Research Institute of Electric Power Industry)

Special Industry Presentation

16:50–17:25 Advances in X-ray Microscopy for Natural Resources and Materials Characterization
Richard Taylor (Carl Zeiss Microscopy Limited, Cambridge, UK)

17:25–17:35 Group Photo

18:00–19:30 Welcome Reception

Day 2 – Wednesday, December 3, 2025

Time: 09:20–15:30

Session Chair: Ryunosuke Kido

Session 4 – Keynote Presentation

09:20–10:00 SPAM: An Open-Source Software for Quantitative 3D + Time Image Analysis
Olga Stamati (3SR Laboratory, Université Grenoble Alpes, France)

Session 5 – Oral Presentations

Session Chair: Yousuke Higo

10:00–10:30 X-ray CT Investigation of Deformation and Force Transmission in Two-Layered Sands under Triaxial Compression
Lalit Kandpal (Port and Airport Research Institute)

10:30–11:00 Spatial Distribution of Bentonite in Sand after Infiltration of Stabilizing Solution Revealed by X-ray Microtomography
Ryunosuke Kido (Hiroshima University)

11:00–11:40 Buffer / Discussion / Transition

11:40–13:00 Lunch Break

Session 6 – Oral Presentations (Student Session 2)

Session Chair: Atsushi Sainoki

13:00–13:20 Study on the Softening Characteristics of Volcanic Ash Soils Containing Aso-4
Pyroclastic Flow Deposits under Cyclic Loading

Kotori Kakazu (Kumamoto University)

13:20–13:40 Effects of surface roughness on the mechanical behavior and particle
kinematics of 3D printed granular material

Yoshiki Miyasaka (Kumamoto University)

13:40–14:00 Identification of Fragmented Particles in CT Images Using SPAM-DDIC

Chenan Wang (Kumamoto University)

14:00–14:35 Comparison of Microscopic Strain Evolution during Loading Tests among
Sandstones and 3DP Specimen

Numerical and Experimental Study on the Complex, Heterogeneous Strain State within a
Fault Damage Zone based on 3DP Specimen

Zhe Zhang (Kumamoto University)

Session 7 – Discussion and Closing

14:40–15:00 General Discussion / Closing Remarks

15:30–16:00 CT Laboratory Tour (optional)