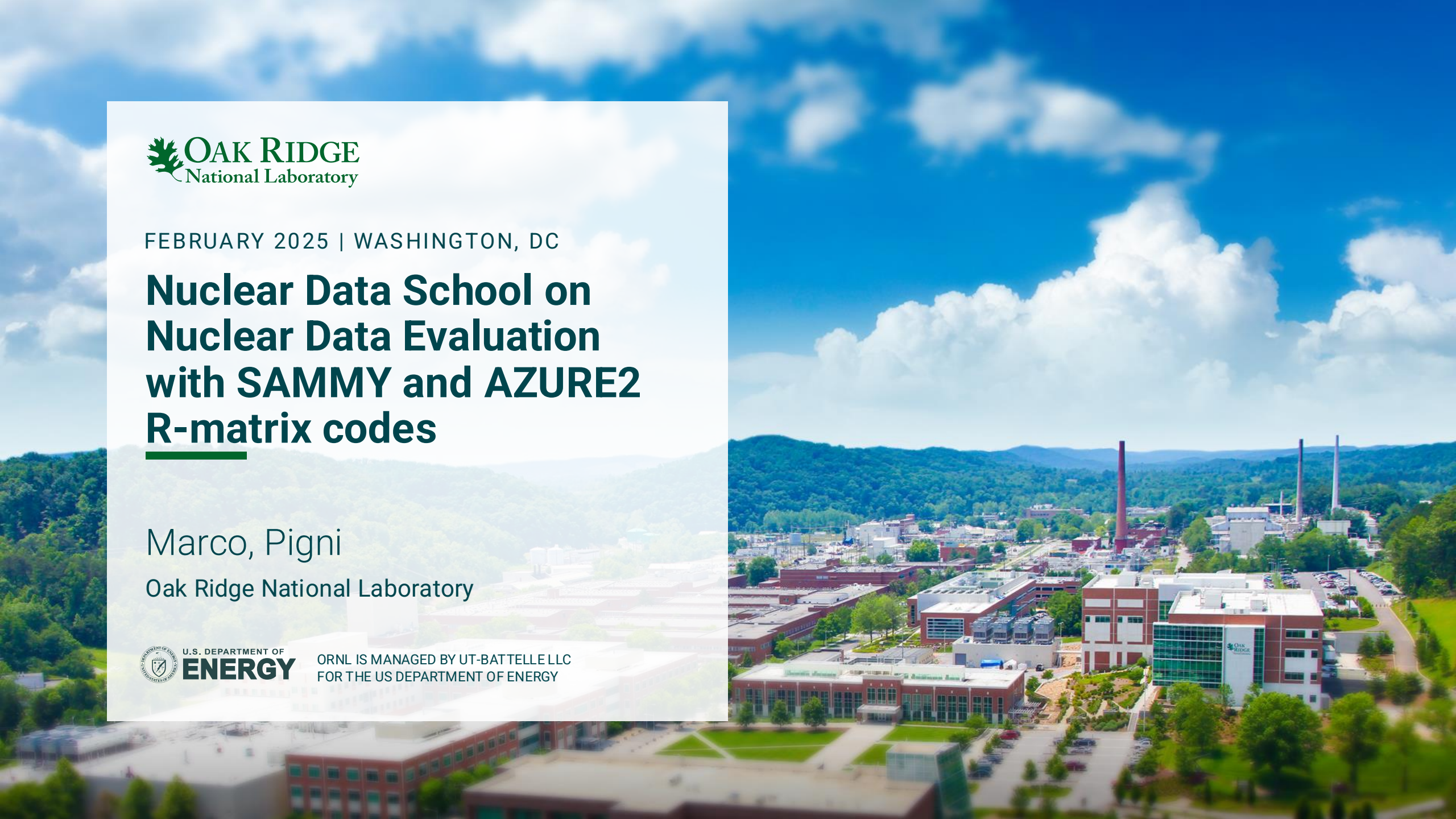

OAK RIDGE National Laboratory

FEBRUARY 2025 | WASHINGTON, DC

Nuclear Data School on Nuclear Data Evaluation with SAMMY and AZURE2 R-matrix codes

Marco, Pigni

Oak Ridge National Laboratory

U.S. DEPARTMENT OF ENERGY

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PROJECT OVERVIEW

- R-matrix school are planned in 2025, 2027, and 2029. Each event with a different topic
  - FY2025 at Oak Ridge National Laboratory (ORNL). Topic: nuclear data libraries
  - FY2027 at University of Notre Dame (ND). Topic: Astrophysics (tentative)
  - FY2029 at Ohio University (OU), Topic: Measurements

- Two options
  - 2-day school: concepts of the evaluation work for selected application
  - 5-day school: SAMMY and AZURE2 training course

- Two R-matrix codes: **SAMMY** and **AZURE2**
  - Both codes are open source. Installation can be performed before attending the school
  - Realistic evaluation cases

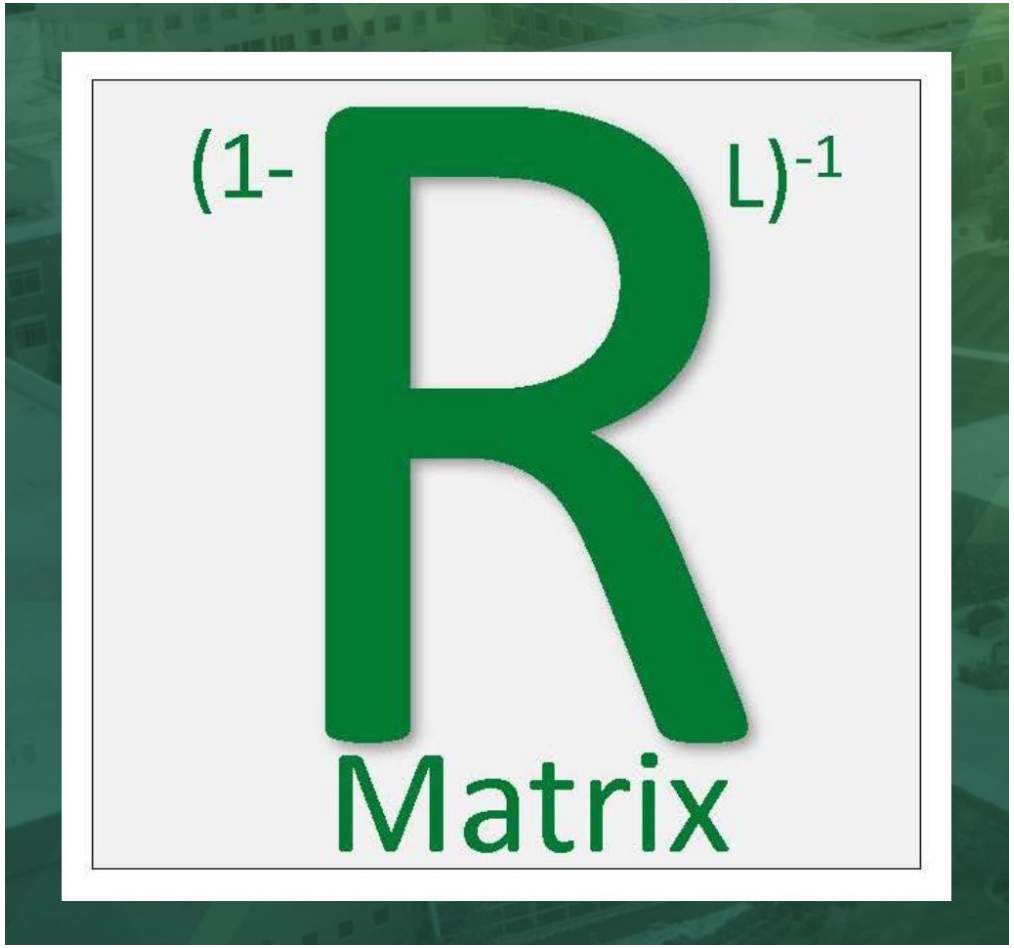
R-MATRIX TEAM

The team of experts in nuclear data evaluation methodologies, processing, measurements, R-matrix theory, and code development

- **Marco Pigni** and **Dorothea Wiarda** (ORNL)
- **Richard DeBoer** (ND)
- **Carl Brune** (OU)

Design of school website (link below) and logo are completed

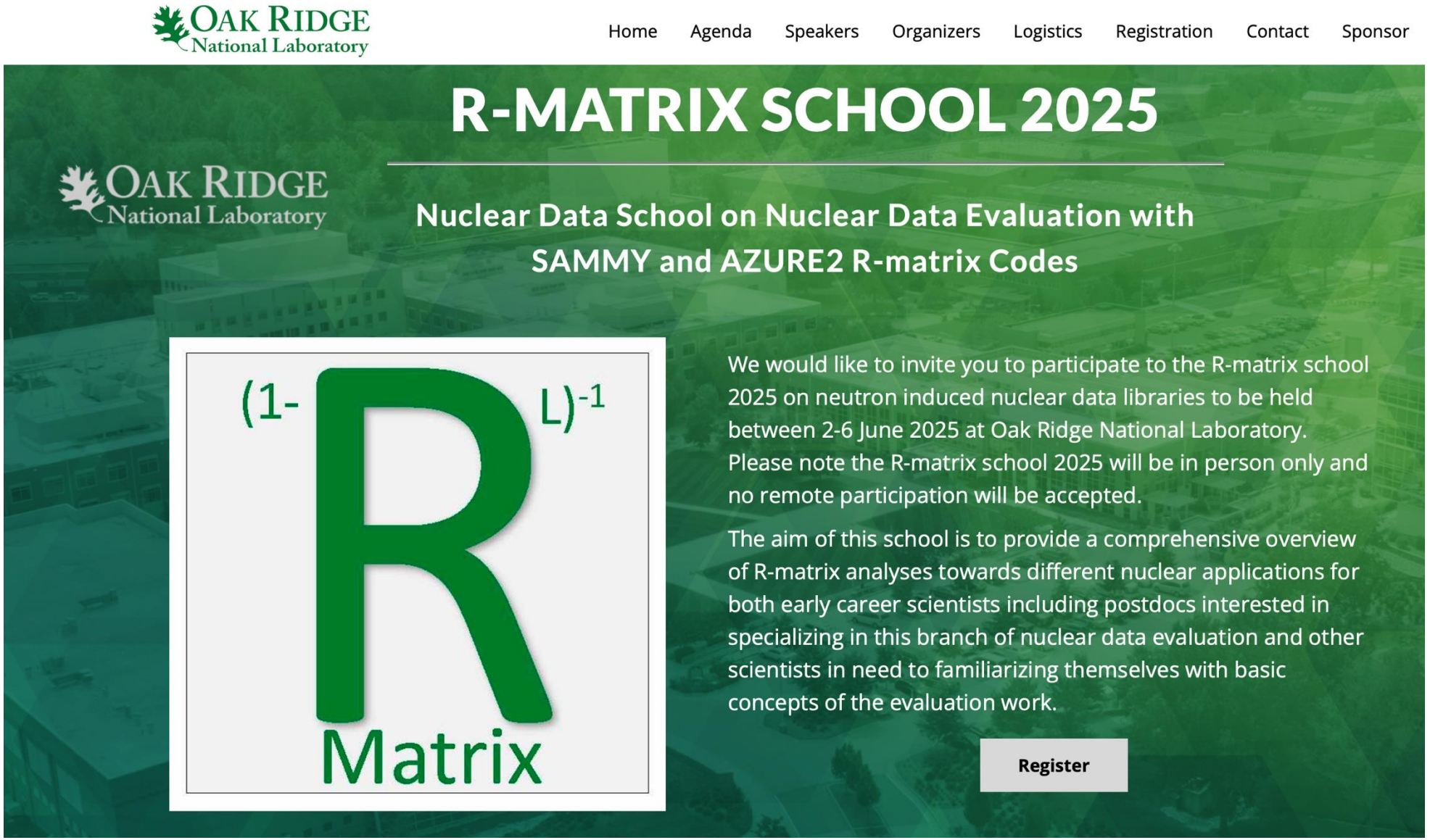
https://rmatrixschool2025.ornl.gov



PROJECT PLAN (FY2025)

- R-matrix school at ORNL, June 2—6 2025
- Registration opened in November 2024
- Max number of attendees is 30
- Main topic is on nuclear data libraries. Classes will be focusing on
  - Measurements type and related experimental libraries
  - R-matrix theory and nuclear data evaluation techniques
  - Evaluation and uncertainty quantification
  - Compilation of nuclear data in evaluated nuclear data files (ENDF)s
  - Nuclear data processing
  - Validation of nuclear data for specific applications, e.g. criticality or reactor applications
  - Training classes with R-matrix codes for realistic cases

R-MATRIX WEBSITE



R-MATRIX WEBSITE

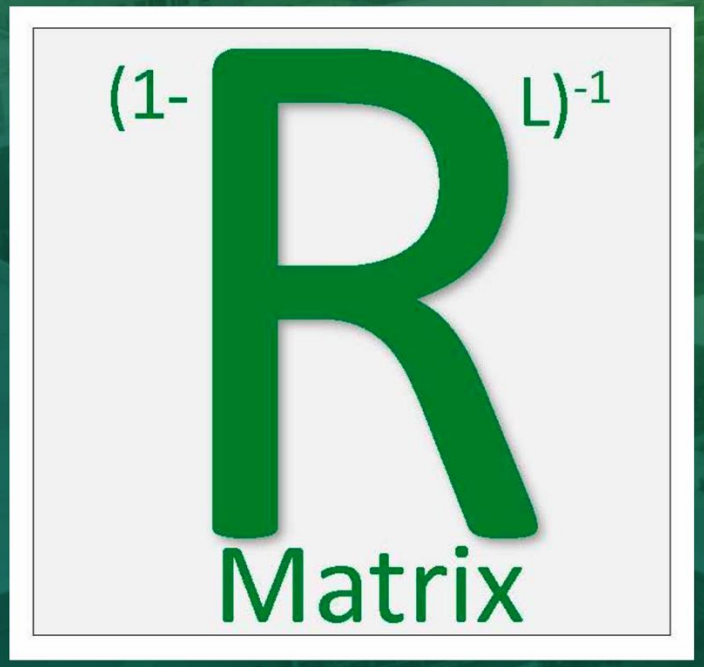
OAK RIDGE National Laboratory

Home Agenda Speakers Organizers Logistics Registration Contact Sponsor

R-MATRIX SCHOOL 2025

OAK RIDGE National Laboratory

Nuclear Data School on Nuclear Data Evaluation with SAMMY and AZURE2 R-matrix Codes



We would like to invite you to participate to the R-matrix school 2025 on neutron induced nuclear data libraries to be held between 2-6 June 2025 at Oak Ridge National Laboratory. Please note the R-matrix school 2025 will be in person only and no remote participation will be accepted.

The aim of this school is to provide a comprehensive overview of R-matrix analyses towards different nuclear applications for both early career scientists including postdocs interested in specializing in this branch of nuclear data evaluation and other scientists in need to familiarizing themselves with basic concepts of the evaluation work.

Register

OAK RIDGE National Laboratory

FEBRUARY 2025 | WASHIGNTON, DC

ACKNOWLEDGMENTS

Marco, Pigni

OAK RIDGE NATIONAL LABORATORY

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This work is supported by the Office of Science, Nuclear Physics within the U.S. Department of Energy funding opportunity DE-FOA-0003238.

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