

2023 SCALE Users' Group Workshop Wednesday–Friday, April 26–28, 2023 Oak Ridge National Laboratory (hybrid meeting)

Agenda as of 4/24/2023

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| Event contact | Germina Ilas ilasg@ornl.gov Will Wieselquist wieselquistwa@ornl.gov | |
|]Event /Time | Moderator/Presenter | |
| Wednesday, April 26, 2023, 8:00 am–12:00 pm (Eastern Daylight Time) Virtual Tutorials via Microsoft Teams | | |
| Tutorial Session [8:00–9:50 am] Frequent Fulcrum Functions: The Basics of SCALE's Graphical User Interface | Rob Lefebvre (ORNL) Shane Hart (ORNL) | |
| Tutorial Session [8:00–9:50 am] LWR Decay Heat Analysis with SCALE | Germina Ilas (ORNL) Bk Jeon (ORNL) | |
| Tutorial Session [8:00–9:50 am] ORIGEN Library Generation with TRITON | Steve Skutnik (ORNL) Briana Hiscox (ORNL) | |
| Tutorial Session [8:00–9:50 am] SCALE Utilities for Nuclear Data Interrogation, Comparison, and Visualization | Jesse Brown (ORNL) Jordan McDonnell (ORNL) | |
| Tutorial Session [10:00 am–12:00 pm] Activation Analysis with ORIGEN/MAVRIC for Advanced Reactors | Cihangir Celik (ORNL) Steve Skutnik (ORNL) | |
| Tutorial Session (10:00 am–12:00 pm) SCALE Modelling & Simulations for Source Terms in Spent Nuclear Fuel | Germina Ilas (ORNL) Shane Hart (ORNL) | |
| Tutorial Session [10:00 am–12:00 pm] SCALE Sensitivity | Jordan McDonnell (ORNL) Will Wieselquist (ORNL) | |
| Lunch Break [12:00–1:00 pm] | | |

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| Event /Time | Moderator/Presenter |
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| Wednesday, April 26, 2023, 1:00–3:00 pm (Eastern Daylight Time) Hybrid Technical Session, Building 5100, Room 128 (Zoom Call-in Option) | |
| Introductions/Welcome [1:00–1:10 pm] | Dave Pointer (ORNL) Germina Ilas (ORNL) |
| Technical Session [1:10–3:00 pm] <u>SCALE Team Highlights</u> <ul style="list-style-type: none"> • ENDF-VIII.1 and AMPX (Brown/McDonnell) • HALEU/HBU/ATF Reactor Physics (Updates) (Mertyurek) • SCALE and NCSP (Bekar/Wieselquist) • Validating Actinides and Fission Products for Burnup Credit Criticality Safety Analyses – Nuclide Compositions Prediction with Extended Validation Basis, NUREG-7108 Revisited (Ilas/Elzohery) • NCS Applications using SCALE 6.3.0 (Greene/Reed) • Non-LWR Updates (Bostelmann) | Jesse Brown (ORNL) Jordan McDonnell (ORNL) Ugur Mertyurek (ORNL) Kursat Bekar (ORNL) Will Wieselquist (ORNL) Germina Ilas (ORNL) Rabab Elzohery (ORNL) Travis Greene (ORNL) Lisa Reed (ORNL) Rike Bostelmann (ORNL) |
| Break [3:00–3:10 pm] | |
| Wednesday, April 26, 2023, 3:10–5:00 pm (Eastern Daylight Time) In-Person only Tutorials | |
| Tutorial Session [3:10–5:00 pm] Building 5100, Room 128 Obiwan from A to Z | Steve Skutnik (ORNL) Shane Hart (ORNL) |
| Tutorial Session [3:10–5:00 pm] Building 5700, Room MS-A104 New Sensitivity Features and More in Sampler | Ugur Mertyurek (ORNL) Rike Bostelmann (ORNL) |

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| Event /Time | Moderator/Presenter |
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| <p>Thursday, April 27, 2023, 8:00–3:00 pm (Eastern Daylight Time) Hybrid Technical Session, Building 5100, Room 128 (Zoom Call-in Option)</p> | |
| <p>Technical Session [8:00–9:40 am] <u>Special Session (Invited Talks)</u></p> <ul style="list-style-type: none"> • The Application of SCALE in Licensing Reviews (Schmidt) • Inference Methods for Reactor Calculations (Abdel-Khalik) • Orano NCS – Use of SCALE in our R&D Projects (Hennebach) • Use of SCALE at Georgia Tech for Senior Design projects (Petrovic) • Uses of SCALE in UNF-ST&DARDS for Spent Nuclear Fuel Analysis (Clarity) | <p>Jeff Schmidt (U.S. Nuclear Regulatory Commission) Hany Abdel-Khalik (Purdue University) Maik Hennebach (Orano-NCS, Germany) Bojan Petrovic (Georgia Tech) Justin Clarity (Pacific Northwest National Laboratory)</p> |
| <p>Break [9:40–9:50 am]</p> | |
| <p>Technical Session [9:50 am–12:00 pm] <u>SCALE Open Mic</u></p> <ul style="list-style-type: none"> • Assessment of Nuclear Data Libraries for SFR Simulation using SCALE (Jiménez-Carrascosa) • Control BUC: Automation of Criticality Calculations with Burnup Credit under Flexible Operation Conditions (Berrios Torres) • Experience with the SCALE Code System (TUV NORD) • GNFA SCALE Applications in Support of Advanced Fuel Cycle (Paulson) • Impact of Multigroup vs. Continuous Energy Data on MSR Depletion Analysis (Bayne) • Shielding Analyses using MAVRIC with Continuous Energy and Multigroup Cross Sections (Hirji) | <p>Antonio Jiménez-Carrascosa (Universidad Politécnica de Madrid, Spain) Marta Berrios Torres (ENUSA, Spain) Kai-Martin Haendel, Mehmet Kadiroglu, Alexander Mühle, Elina Oberlander, and Antonia Zipfel (TÜV NORD, Germany) Lon Paulson (GE Nuclear) Christopher Bayne (Georgia Tech) Rakim Hirji (Georgia Tech)</p> |
| <p>Working Lunch [12:00–1:00 pm] <u>50 years of ORIGEN Impacts (panel)</u></p> | <p>Germina Ilas (moderator) (ORNL) Syd Ball (ORNL) Ian Gauld (ORNL Retired) Cecil Parks (ORNL Retired/Boston Government Services) Doro Wiarda (ORNL) Will Wieselquist (ORNL)</p> |

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| <p>Technical Session [1:00–3:00 pm] <u>Best Practices for SCALE Modeling & Simulation</u></p> <ul style="list-style-type: none"> Analyzing Safeguards-Relevant Parameters of a Fast-Spectrum Molten Chloride Salt Reactor (Hartanto) Reactor Pressure Vessel Fluence Validation (Alpan) Nuclide Inventories with ORIGAMI for Criticality Safety Models (Elzohery) ORIGEN Sensitivities in 6.3 (Jeon/Wieselquist) SCALE-6.3.0/Polaris-PARCS-v3.4.2 Validation: Reactor Physics (Kim) VADER in a Nutshell (Hart) | <p>Donny Hartanto (ORNL) Arzu Alpan (ORNL) Rabab Elzohery (ORNL) Shane Hart (ORNL) Bk Jeon (ORNL) Kang Seog Kim (ORNL) Will Wieselquist (ORNL)</p> |
| <p>Break [3:00–3:10 pm]</p> | |
| <p>Thursday, April 27, 2023, 3:10–5:00 pm (Eastern Daylight Time) In-Person only Tutorials</p> | |
| <p>Tutorial Session [3:10–5:00 pm] Building 5100, Room 128 Fulcrum Data and Geometry Visualization</p> | <p>Rob Lefebvre (ORNL) Shane Hart (ORNL)</p> |
| <p>Tutorial Session [3:10–5:00 pm] Building 5700, Room MS-A104 Molten Salt Reactor Analysis with SCALE</p> | <p>Donny Hartanto (ORNL) Jin Whan Bae (ORNL)</p> |

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| Event /Time | Moderator/Presenter |
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| Friday, April 28, 2023, 8:00 am–12:00 pm (Eastern Daylight Time) Hybrid Technical Sessions, Building 5100, Room 128 (Zoom Call-in Option) | |
| Technical Session [8:00–9:00 am] <u>SCALE Open Mic</u> <ul style="list-style-type: none"> • SCALE Modeling of High Temperature Gas Reactors (Berens) • ORIGEN Neutron Source Calculations for Pu-238 Program Material Packages (Karriem) • Target Activation and Analysis GUI (TAAG) Introduction and Test Problem (Krupcale) • Modeling a Pebble Bed Gas-Cooled Reactor with SCALE (Richter) • Analysis of the Parameterization Efficiency of the Macroscopic Cross Section of PWR Nuclear Reactors (Fiel) | Annie Berens (University of Tennessee-Knoxville [UT-K]) Zain Karriem (ORNL) Matthew Krupcale (ORNL) Zoe Richter (University of Illinois at Urbana-Champaign) João Claudio Batista Fiel (Instituto Militar de Engenharia, Brazil) |
| Technical Session [9:00–10:00 am] <u>Best SCALE Model Contest</u> | Mario Redondo Morales (Universidad Politécnica de Madrid, Spain) Annie Berens (UT-K) Jonathon Faulkner (Georgia Tech) Ethan Krammer (University of New Mexico) Zoe Richter (University of Illinois at Urbana-Champaign) Jonathan Wing (UT-K) |
| Break [10:00–10:10 am] | |
| Technical Session [10:10–11:00 am] <u>Best SCALE Model Contest (continued)</u> | Mathieu Dupont (ORNL) Rabab Elzohery (ORNL) Donny Hartanto (ORNL) Matt Jessee (ORNL) Kang Seog Kim (ORNL) Matthew Krupcale (ORNL) B.J. Marshall (ORNL) |
| Closing Session [11:00 am–12:00 pm] | Will Wieselquist (ORNL) Germina Illas (ORNL) |