

4th Annual 2024 MCNP[®] User Symposium

Agenda



Final

August 19-22, 2024

Monday, August 19, 2024

**Los Alamos National Laboratory
TA-03, Building 0207, 2nd Floor**

9:00	Check in	
9:30	Introduction and announcements	
9:40	Opening remarks	Angela Chambers; NNSA
9:55	MCNP6 Developments: A Year in Review	Michael Rising; LANL
10:35	Break	

Reactors and Criticality (Session Chair: Alex Clark)

10:50	Los Alamos Criticality Experiments	Jesson Hutchinson; LANL
11:30	Designing a Deimos-based Microreactor Criticality Experiment with MCNP and Whisper	Alexis Maldonado; LANL

Data and Physics (Session Chair: Alex Clark; Fred Jones)

SECURITY NOTICE: The following articles are prohibited on Laboratory property: firearms, explosives, and dangerous weapons, including knives with blades longer than 2.5 inches; alcoholic beverages; controlled substances; and other items prohibited by law. The following privately owned devices are prohibited in Limited Areas and above: cell phones; smart watches; laptop or tablet computers; two-way pagers; memory devices such as thumb drives; and devices with Bluetooth or wireless connectivity, including medical devices. (Inform your host of any Bluetooth/wireless medical devices).

Photographic activity of any kind is prohibited on Laboratory property.

All vehicles and individuals on Laboratory property are subject to random inspections by the Protective Force at any time.

Purpose:

MCNP 2024

Technical POC

MCNP2024@lanl.gov

Dress: Business Casual

LANL Protocol POC:

Sarah Haag, CEA-PRO, 505-309-2048

Revised: 8/26/2024 5:14 PM

Accessible Meeting:

If you need an accommodation for a meeting, please let the meeting organizer know.

LANL Update:

505-667-6622 or 1-877-723-4101; provides information about changes in the Laboratory schedule (i.e., closings or delays).

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11:50	Improvement to Neutron Inelastic Scattering Contributions to Next-Event Estimators	Jeremy Sweezy; LANL
12:05	Lunch	
13:35	The road to a modernized NJOY	Wim Haeck; LANL

Reactors and Criticality (Session Chair: Fred Jones)

14:05	Implementation of an Empirical Density Law for Aqueous Plutonium Chloride Systems and Its Potential Reactivity Effects	Riley Bulso; LANL
14:25	Modeling Approaches for Depletion of a TRISO-Fueled Microreactor	Keenan Hoffman; LANL
14:45	Break	

Data and Physics (Session Chair: Bob Little)

15:00	Upcoming Release of the U.S. Nuclear Data Library ENDF/B-VIII.1	Denise Neudecker; LANL
15:25	The Development of a New Cinder	Colin Josey; LANL

Fusion Applications (Session Chair: Bob Little)

15:55	MCNP6 Subroutine for Simulating D-T Neutron Source in Ti-T Targets	Micky Dzur; TAMU/LANL
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16:10 Day 1 Adjourns

Bathtub Row Brewing
[163 Central Park Square](#)
[Los Alamos, NM, 87544](#)

17:00 Open Reception (No Host)

Tuesday, August 20, 2024

Los Alamos National Laboratory TA-03, Building 0207, 2nd Floor

8:30 Check-In

ORNL-STIS (Session Chair: Joel Kulesza)

9:00	Status of the Neutronics Design of the Second Target Station Project at the ORNL Spallation Neutron Source	Thomas M. Miller; ORNL
9:20	Dose Rate Analyses of Accelerator Tunnel Shield Wall and Labyrinth	Wouter C. de Wet; ORNL
9:35	Simulation Studies of Prompt Dose Distribution in the Second Target Station Downstream Utilities Area.	Vitaly Pronskikh; ORNL
9:50	Residual Dose Rates Analyses from Vent Lines Shield Block on the Target Cart at Spallation Neutron Source	Irina Popova; ORNL

Data and Physics (Session Chair: Mike Rising)

10:05	Nuclear Data Evaluations of Medium-Mass nuclei and Actinides	Amy Lovell; LANL
10:35	Break	
10:50	Python package for Mobile Inelastic Neutron Scattering Analysis of Soil	Jose Cortes; UT-Arlington
11:10	Nuclear data activities at LANSCE	Thanos Stamatopoulos; LANL
11:30	Updating Covariance Data for Use in MCNP-related Tools	Nathan Gibson; LANL
11:50	MCNP tallied weight functions to improve multigroup simulations	Miriam Kreher; LANL
12:05	Design and Development IER:516 - Zirconium Test Assembly (ZTA) - Critical Experiments for Zr Nuclear Data Verification and Validation	Gregory Siemers; LANL

12:20 Lunch

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AI in Nuclear Simulations (Session Chair: Colin Weaver)

13:50	Cyclone Sage: Developments in AI MCNP Input Generation for Radiation Transport and Criticality Safety Simulations	Daniel Cork; Cerberus Nuclear
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Applications and Experimental Design (Session Chair: Jeremy Sweezy)

14:10	Impact of Higher Fidelity Design Iterations on Critical System Criteria	Peter Brain; LANL
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14:35	Thales: Designing a New Fast Tantalum Benchmark Experiment for Criticality Safety	Isaac Michaud; LANL
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14:55	Low-fidelity MCNP Integral Experiment Model Optimization	Noah Kleedtke; LANL
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15:15 Break

15:30 MCNP Workshop MCNP Team; LANL

16:30 Day 2 Adjourns

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Wednesday, August 21, 2024

**Los Alamos National Laboratory
TA-03, Building 0207, 2nd Floor**

08:30 Check-in

Reactors and Criticality (Session Chair: Colin Josey)

9:00	One Click MCNP/Abaqus Multiphysics for Nuclear Reactors	Jerewan Armstrong; LANL Alexis Maldonado; LANL Ian Aranda; LANL Esteban Gonzalez, LANL
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Tools (Session Chair: Colin Josey)

9:40	A Python Toolkit for Reading and Processing LNK3DNT Files	Anthony Kitamura; TAMU/LANL
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Extended Capabilities (Session Chair: Colin Josey)

9:55	MCNP code extensions for cold and thermal neutron beam simulations	Kyle Grammer; ORNL
10:25	Assessment of a Shielded HPGe Detector with MCNP Accelerated by PENTRAN Adjoint	Glenn Sjoden; University of Utah

10:35 Break

Fusion Applications (Session Chair: Jeff Bull)

10:50	Development of CAD2CDGS, a new tool to generate decay gamma sources based on CAD models for the nuclear analysis of IFMIF-DONES lithium loop	Juan Garcia; University of Granada, Spain
11:10	Calculations of radiation back-flux from neutron irradiation in fusion power reactors	Michael Lively; LANL
11:30	Overview of Methods Used and Challenges Faced Using the MCNP Code at Commonwealth Fusion Systems	Avery Grieve; Commonwealth Fusion Systems

Parallel Computing (Session Chair: Cole Frederick)

11:50	Global Adventures with MCNP: A Modern Supercomputing Operating System for Rapid Results	Victor Kuhns; Hoonify Technologies
12:20	Lunch	
13:50	MCNP6 Parallel Performance Analysis: How to Efficiently Run MCNP6 in Parallel	Jeff Bull; LANL

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Shielding Applications (Session Chair: Kyle Grammer)

14:05	LANSCE Intense Pulsed Proton Source Search for Dark Sector Particles with the Coherent CAPTAIN-Mills Experiment	Richard Van de Water; LANL
14:35	MCNP6 Evaluation of Exposure Dose Rates from a 252Cf-Based Neutron Irradiator for NAA	Livia Fernandes-Barros; MIT

Space and Earth Science Applications (Session Chair: Kyle Grammer)

14:55	Simulating Active Neutron and Gamma-Ray Spectroscopy for Mars Sample Return	Sean Czarnecki; LANL
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15:05 Break

Extended Capabilities (Session Chair: Colin Weaver)

15:20	2024 Plotter Update	Cole Frederick; LANL
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15:35 Q&A with the MCNP and Nuclear Data Teams

MCNP and Data Teams;
LANL

16:25 Day 3 Adjourns

Gabriel's

[Highway 285, Exit 176 Cuyamunque](#)

[4 Banana Ln](#)

[Santa Fe, NM, 87506](#)

18:00 Dinner (in-person event, registration required)

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Los Alamos History Museum
1050 Bathtub Row
Los Alamos, NM, 87544

14:00 Historical Tour (in-person event, registration required)

16:00 Depart to Otowi

Onsite Transit Service

Los Alamos National Laboratory
TA-03, Building 0261

16:15 Tour participants depart