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On the MCNP Forum and its Community

Joel A. Kulesza & Mark L. Baird

MCNP User Symposium
July 7–10, 2025

LA-UR-25-26546, Rev. 1



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Acknowledgements

Thanks to Tim Valentine for providing RSICC licensing details and Fred Jones for deploying and overseeing the Discourse MCNP Forum.

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Outline

Background and Motivation

MCNP Releases

Overview of Forum Epochs

Aggregated Information on the Discourse Forum

- Posts

- Daily Activity

- Member Behaviors & (Anonymized) Composition

Background and Motivation

- ▶ Recent reporting on the history of MCNP development [1]
 - ▶ The first MCNP public release was in 1983 (see next slide)
- ▶ However, no centralized and concise record of releases exists
 - ▶ ...nor a description of the community that depends on them
- ▶ Historically, the MCNP community gathered only on the MCNP Forum
 - ▶ There are three epochs of the MCNP Forum
 1. The RSICC eNotebooks (November 1999–October 2010)
 2. The email-based forum (August 2005–September 2024)
 3. The Discourse-based Forum (June 25, 2024–)
 - ▶ As each epoch closes, information on its venue and activities begin to fade



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RSIC Newsletter

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No. 225

August 1983

The pursuit of truth shall set you free - even if you never catch up with it - Clarence Darroch

6th ICRS Overview

What follows is a brief summary of the 6th Conference on Radiation Shielding as given by T. Asakura (JAERI), T. Iiyoshi (Kyoto University), T. Suzuki (JAERI), and S. Kikuchi (Kyoto University).

INTRODUCTION The Sixth International Conference on Radiation Shielding (ICRS) was held in Tokyo, Japan, May 16-20, 1983 under the sponsorship of Japan Atomic Energy Research Institute (JAERI), in cooperation with IAEA, OECD-NEAP and American Nuclear Society (ANS) in addition to various Japanese supporting organizations, namely the Science and Technology Agency (STA), the Power Reactor and Nuclear Fuel Development Corporation (PFNC), the Japan Nuclear Ship Research and Development Agency, the Federation of Electric Power Companies, Atomic Industry Groups, Construction Companies, Engineering Companies, Data Services Companies and the Atomic Energy Society of Japan.

As compared with the previous conferences in this series held about every 5 years, the conference name was changed from "Reactor Shielding" to "Radiation Shielding" because the activity area has become very wide to cover all radiation shielding. Accordingly, the scope of the conference was extended to comprise advances in shielding and radiation protection for fission, fusion, fuel handling, rad-waste and other related facilities. In addition, emphasis was put on practical aspects of shielding design, requirements for nuclear data, and occupational exposure problems in operating power reactors.

The conference was held in two meeting rooms

with about 220 participants from 22 countries and 9 international organizations, namely Australia, Canada, China (PR), Denmark, Finland, France, Germany (FR), Hungary, India, Iran, Israel, Italy, Japan, Korea (RO), Libya, Poland, Sweden, Switzerland, Turkey, United Kingdom, United States, USSR, EC and OECD-NEA.

In the opening session of May 16, Y. Takaoka, Director General for Atomic Energy Bureau, STA, gave a talk under the title of "Current Status of the Development of Nuclear Energy in Japan," following the opening address of H. Ishikawa, General Chairman of the Japanese Organizing Committee for the Sixth ICRS. At the luncheon of May 19, Betty F. Mawdsitt, Director of the Radiation Shielding Information Center, ORNL, gave a speech titled "RSIC After 20 Years - A Look Back and a Look Ahead," and in the closing

RSIC INFORMATION VISIT TO CHINA (PRC)

Betty F. Mawdsitt made an RSIC information visit May 23-June 3, 1983, to the People's Republic of China (PRC) headed by the Institute of Atomic Energy (IAE), Andersen Shimo. The visit was organized as a result of the RSIC's reputation and the promised expertise the RSIC director in radiation protection, transport, and shielding technical areas.

Betty was requested to lecture on the history, development and current methodology of shielding technology, the status of multipurpose data creation and availability, and the concepts, input, and operation of information analysis systems. She also gave technical seminars on the state of the art as indicated by the coverage of the ICRS. The host personnel (IAE, Beijing Institute of Atomic Energy) made technical presentations their work and gave a tour of the IAE facilities.

During the visit, the agenda for IAE was designed to allow for a day of CO-discussions in Beijing, a training (TRINE), and a day at the 725 Reactor Design Institute in Shanghai.

aligned geometry, time-dependent, coupled neutron-photon Monte Carlo transport code was contributed by Los Alamos National Laboratory, Los Alamos, New Mexico. This version replaces the previously existing CCC-200/MCNP.

The code system treats an arbitrary three-dimensional configuration of materials in geometric cells bounded by first- and second-degree surfaces and some special fourth-degree surfaces. Pointwise cross-section data are used. For neutrons, all collisions in a particular conversion evaluation are accounted for. For photons, the code takes account of incoherent and coherent scattering, fluorescent emission following photo-absorption, and absorption in pair production with local emission of annihilation radiation. This package is based on MCNP version 3 which is now under trial usage in-house at LANL. Potential users are encouraged to acquire the package now to gain experience in its use. It allows the user to derive a given hardware version from a master source using a special conversion routine, PRCPC. It is expected that this initial release will provide feedback which will allow the contributors and RSIC to collect indicated revisions over the next few months. This feedback from the user community in general and from in-house use at LANL is expected to result in an update to v. 3, in 12-month time frame. Reference: "MCNP - A General Monte Carlo Code for Neutron and Photon Transport," informal report (April 1981), PORTMAN 77, IBM 5033 (A), CRAY 1 (B), VAX 11 (C), CDC 7600 (D).

CALCULATION OPTIMIZATION

We have been informed of a bug in subroutines PCOIN of the DOT two-dimensional discrete ordinates transport code system. The problem, not thought to be serious for most practical problems, will cause erroneous results for the most backward-directed angular fluxes computed in cases using 10° geometry. The problem affects all versions of CCC-220/PCOIN, CCC-220/DOPT 4.2, and CCC-220/DOPT 4.3, and was one in the process of making appropriate updates. The coding change is minor and details will be provided upon request from RSIC to DOT users wishing to update their own source code.

CHANGES TO THE COMPUTER CODES COLLECTION

During the month a new code package was added to the RSIC Computer Codes Collection, an existing code package was replaced with a new version, and an existing package was updated to add new options.

CCC-200/MCNP

This general purpose, continuous-energy, gener-

ated upon the solution of the one-dimensional neutron diffusion equation. The input data can be either typed in through the keyboard or read in from the data file which has previously been generated and saved on the diskette by the program. The system can handle 1 or 2 groups, up to 250 mesh points and up to 5 regions. The main features of the program are:

- choice of three geometries;
- calculation of the fluxes and multiplication factor;
- plotting of the flux shapes on the TV screen;
- one iteration problems;
- choice of one of nine possible sets of boundary conditions.

Reference: Thesis from Pennsylvania State University (January 1983), BASIC, APPLE II.

PERSONAL ITEMS

In serving a specialized area of scientific endeavor, it seems important that we take note of the movement of people concerned with radiation protection, transport, and shielding in the nuclear industry. We, therefore, continue to carry personal items as they are brought to our attention. During the past month we have been informed of the following changes: Fred Wefjve, and Henry W. Wells, from Babcock and Wilcox, to General Electric Co., Wilmington, North Carolina; William A. Ralston, from Dartmouth College, Hanover, New Hampshire, to the University of Wyoming, Laramie; Wyoming M. A. Rehner, from the University of Dundee, United Kingdom; to Alamos, Intel and Penn State, from Cygnus Corporation, Solana Beach, California; to Cygnus Energy Service, San Diego, California; Henry C. Jensen, a principal in the initial establishment of the ENDF/B-6 New System at Brookhaven National Laboratory and the development of the modular code system JOSHUA at Savannah River Laboratory, to now head of Computer Applications Technology, Inc., Atlanta, South Carolina.

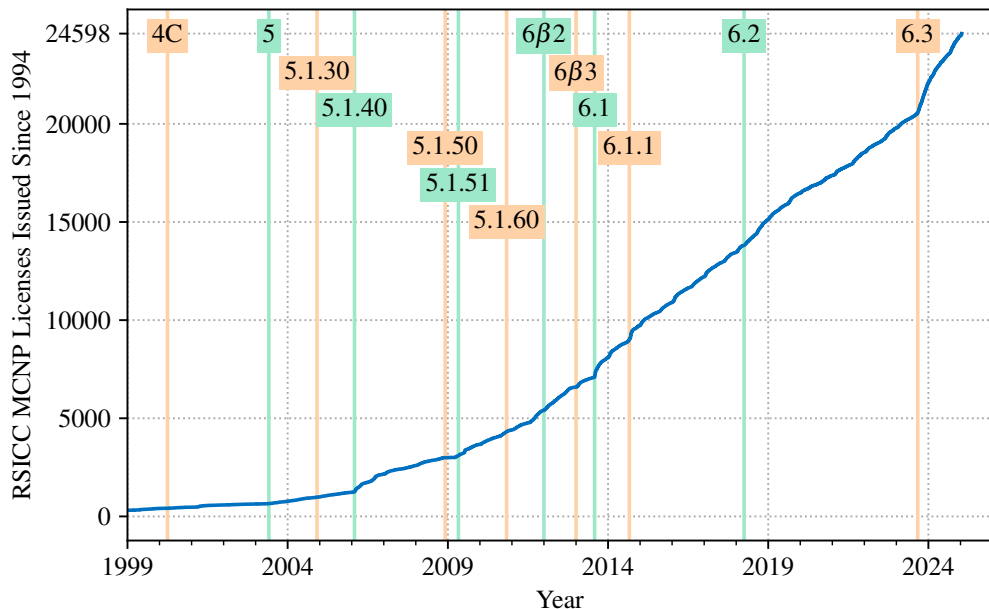
Michael Treadwell has been appointed chairman of the Student Engineering Department of the University of Missouri-Rolla.

Ranken Named Manager of SNL Radiation Effects

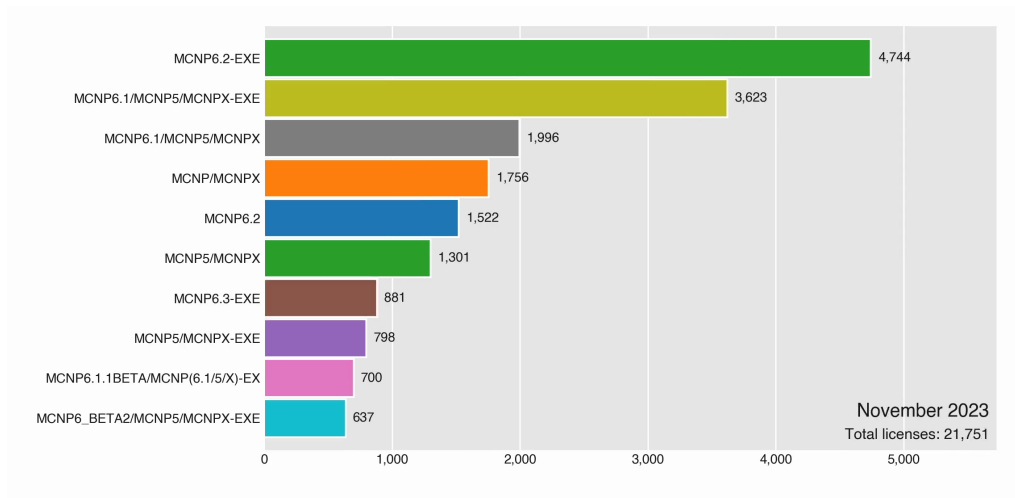
The newly created Radiation Effects Department of Sandia National Laboratories will be managed by James H. Ranken.

The mission of the department is to provide information about radiation effects on the hardware of Sandia-designed nuclear weapons hardware. This will

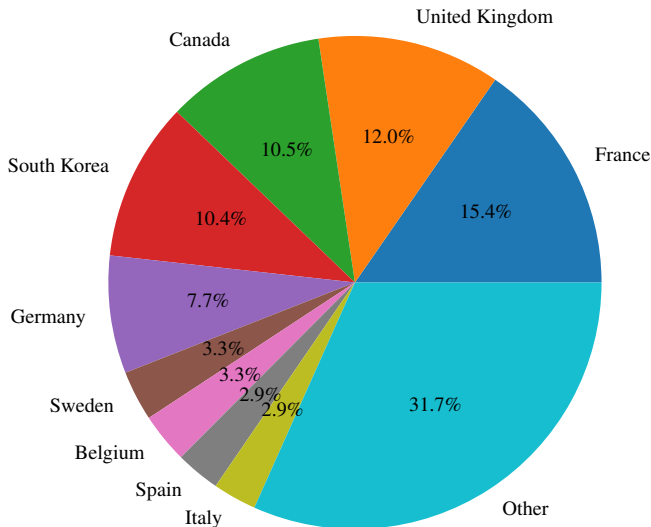
MCNP Releases By The Numbers



MCNP Releases By Version



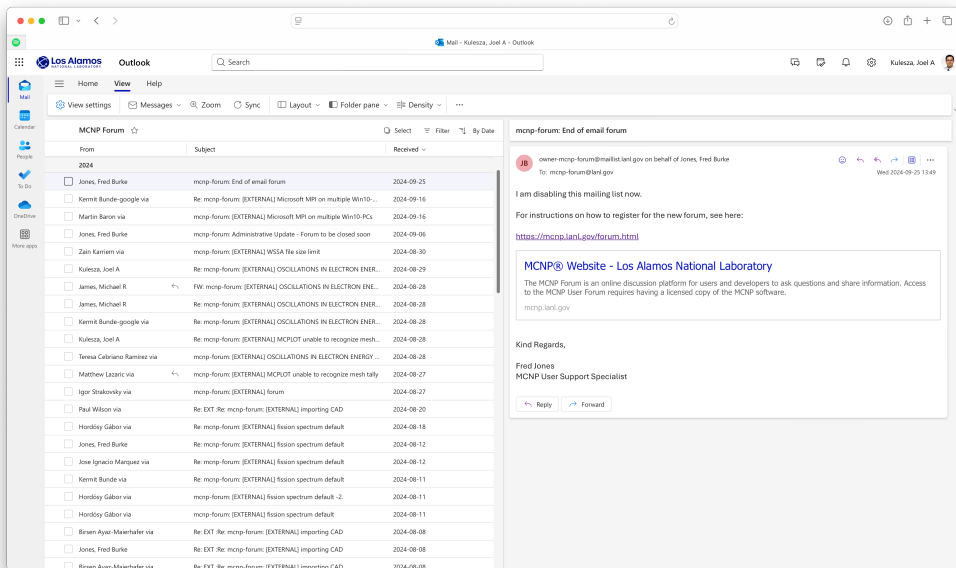
MCNP Releases By Country



The RSICC eNotebooks



Email Forum



Discourse Forum Overview

The screenshot displays the MCNP Discourse Forum interface. The browser address bar shows the URL `mcnp.discourse.group/categories`. The left sidebar contains a navigation menu with the following items: Topics, My Posts, Review (40 pending), Admin, Invite, More, CATEGORIES (General, Job Opportunities, Known Bugs, Site Feedback, All categories), TAGS (bug, build-system, installation, nuclear-data, classes, All tags, Configure defaults), MESSAGES (Inbox, admins-email), and a bottom section with a plus icon. The 'All categories' item is highlighted with a red arrow. The main content area shows a list of categories with a red arrow pointing to the 'Categories' tab. The categories listed are General, Known Bugs, Job Opportunities, Conferences, Site Feedback, Errata, and Staff. Each category has a list of topics with their respective counts and timestamps.

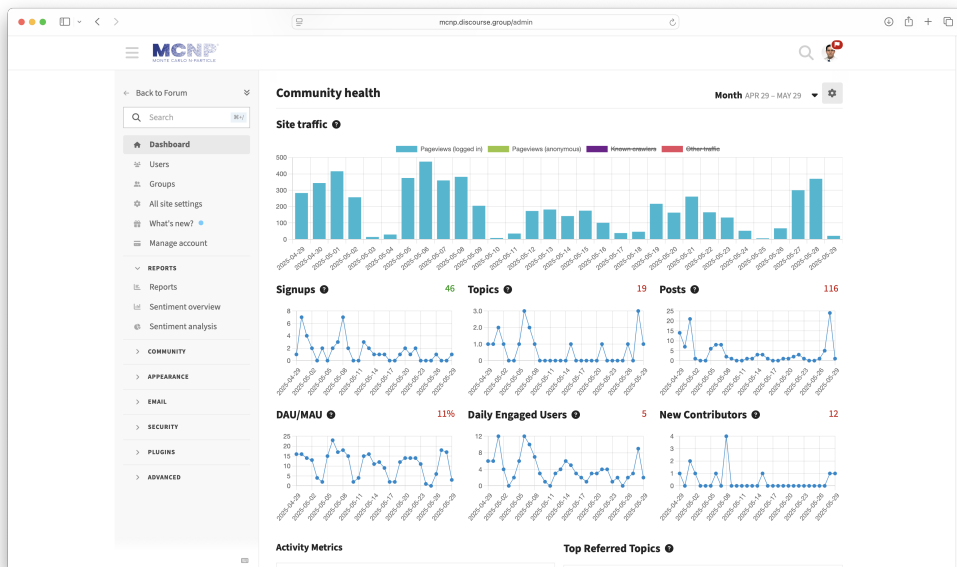
Category	Topics	Latest
General Topics that don't fit into any other existing category	265 1 unread 2 new	Failed Nuclear Data Installation General Installation, 0 votes 7h
Known Bugs Bugs in the code that have been confirmed by the MCNP development team	9	Calculation of conversion coefficients fluence-to-dose for Hp(10) General 0 votes 11h
Job Opportunities Job opportunities that involve the MCNP code	11	Periodic boundary condition General 0 votes 12h
Conferences Information about upcoming conferences and other types of gatherings	2	How to get the heavy ion LET differential spectrum using an F2 tally General 0 votes 14h
Site Feedback Discussion about this site, its organization, how it works, and how we can improve it.	6	MPI fatal error General 0 votes 16h
Errata Errors discovered after publication	1	Periodic boundary conditions 2 General 0 votes 17h
Staff Private category for staff discussions	5	Modeling DX Radiography X-ray Beam to Estimate ESD (Entrance Skin Dose) General 0 votes 7d
		FS Card w/ Repeated Structures General 0 votes 7d
		Example of vertical input General 0 votes 14d
		Cell Tagging - Lattice Cells 7

Discourse Forum Overview

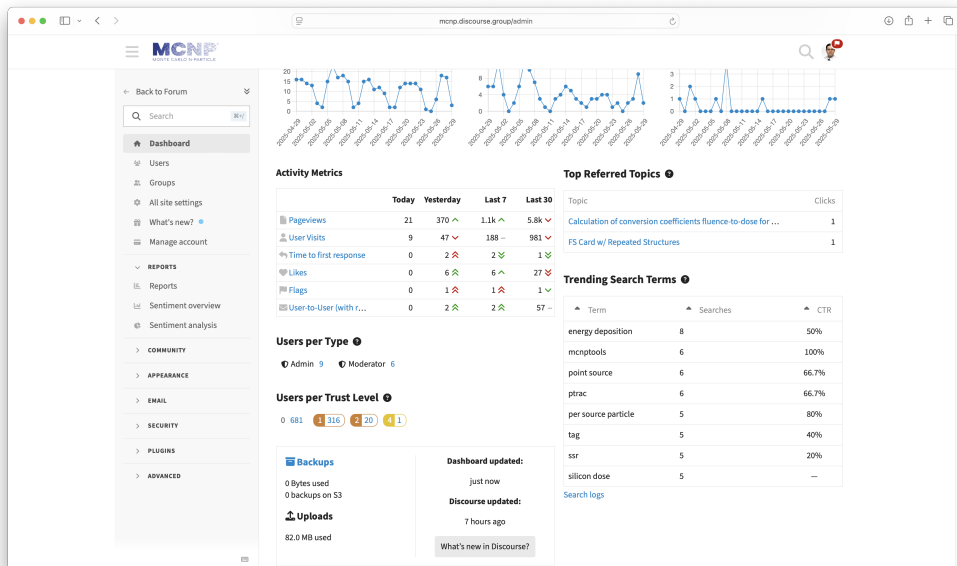
The screenshot shows the MCNP Discourse Forum interface. The left sidebar contains navigation links: Topics (highlighted with a red arrow), My Posts, Review (40 pending), Admin, Invite, and More. Below these are sections for CATEGORIES (General, Job Opportunities, Known Bugs, Site Feedback, All categories) and TAGS (bug, build-system, installation, nuclear-data, classes, All tags, Configure defaults). The main content area displays a list of topics with columns for Topic, Replies, Views, and Activity. A red arrow points to the 'last visit' label in the topic list.

Topic	Replies	Views	Activity
Failed Nuclear Data Installation ■ General 0 votes	0	2	7h
Calculation of conversion coefficients fluence-to-dose for Hp(10) ■ General 0 votes	11	57	10h
Periodic boundary condition ■ General 0 votes	7	15	12h
How to get the heavy ion LET differential spectrum using an F2 tally ■ General 0 votes	6	12	14h
MPI fatal error ■ General 0 votes	7	121	16h
Periodic boundary conditions 2 ■ General 0 votes	1	8	18h
Modeling DX Radiography X-ray Beam to Estimate ESD (Entrance Skin Dose) ■ General 0 votes	7	91	6d
FS Card w/ Repeated Structures ■ General 0 votes	2	68	7d
Example of vertical input ■ General 0 votes	7	109	14d
Cell Tagging - Lattice Cells ■ General 0 votes	2	52	17d
Helpful plugins for MCNP and text Editors ■ General 1 vote	3	164	21d
Help Understanding Tally Normalisation with SSR Source from KCODE Problem			

Discourse Forum Admin Dashboard: Behind the Curtain



Discourse Forum Admin Dashboard: Behind the Curtain



Discourse Forum Admin Dashboard: Behind the Curtain

The screenshot displays the Discourse Forum Admin Dashboard for the MCNP forum. The left sidebar contains navigation links: Back to Forum, Search, Dashboard, Users, Groups, All site settings, What's new?, and Manage account. The main content area is titled 'Reports' and includes a sub-header explaining that reports help understand site activity. Below this, there are two tabs: 'Dashboard settings' and 'Reports'. A 'Filter reports' input field is present. The dashboard is organized into a grid of report cards, each with a title and a brief description of the data it tracks.

Reports

Reports are a powerful tool to help you understand what's happening on your site. They can help you identify trends, spot problems, and make decisions based on data. • [Learn more...](#)

[Dashboard settings](#) [Reports](#)

Filter reports

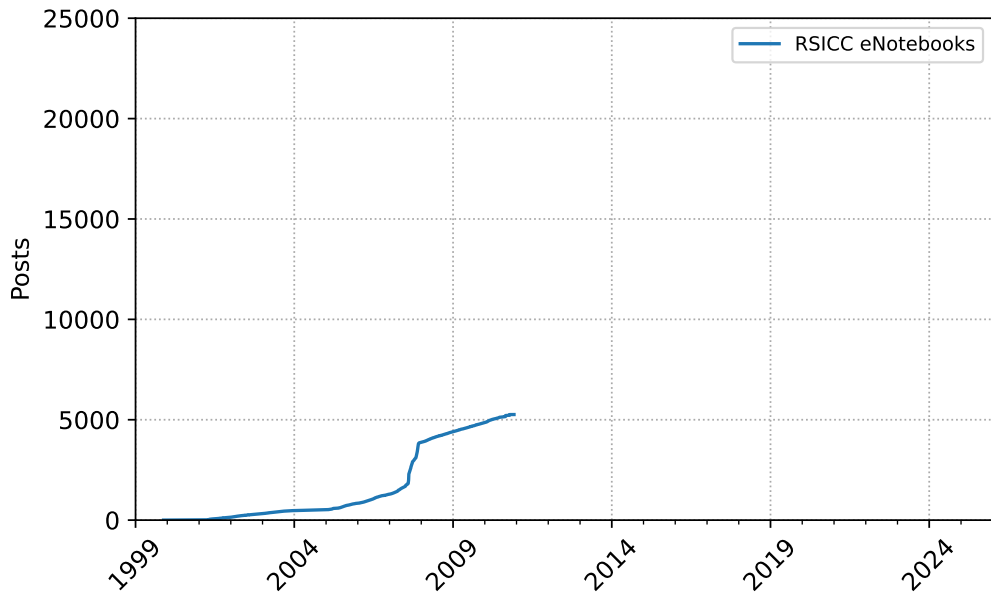
Accepted solutions	Admin Logins List of admin login times with locations.	Anonymous Browser Pageviews Number of pageviews by anonymous visitors using real browsers.
Bookmarks Number of new topics and posts bookmarked.	Consolidated API Requests API requests for regular API keys and user API keys.	DAU/MAU Number of members that logged in in the last day divided by number of members that logged in in the last month – returns a % which indicates community 'stickiness'. Aim for >20%.
Daily Engaged Users Number of users that have liked or posted in the last day.	Emails Sent Number of new emails sent.	Flags Number of new flags.
Flags Status List of flags' statuses including type of flag, poster, flagger, and time to resolution.	Legacy Consolidated Pageviews Legacy report showing pageviews for logged in users, anonymous users and crawlers. This has been superseded by the 'Site traffic' report.	Legacy Pageviews Legacy report showing the number of new pageviews from all visitors.
Likes	Logged in Browser Pageviews	Moderator Activity

Discourse Forum Admin Dashboard: Behind the Curtain

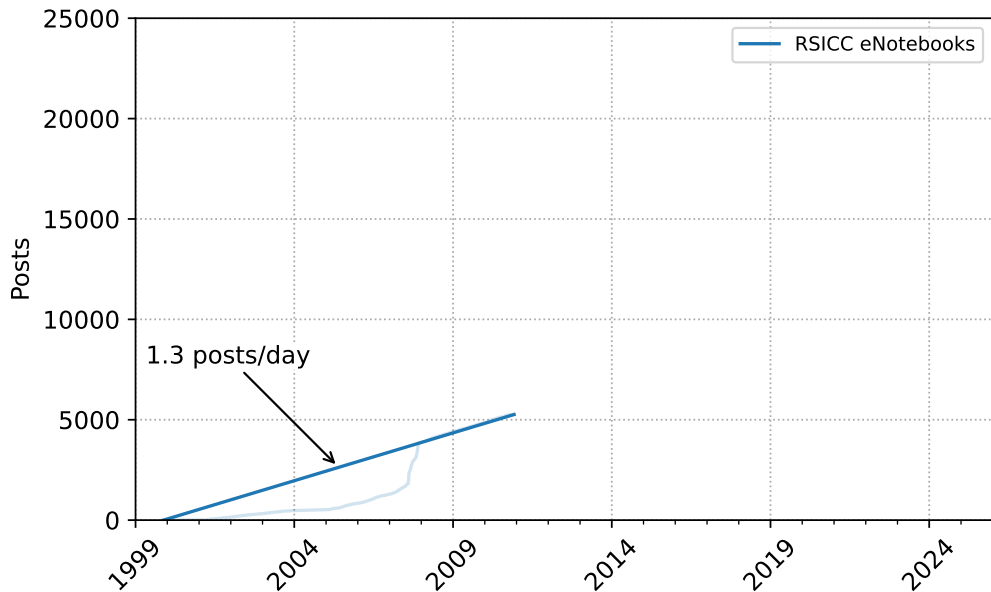
The screenshot displays the Discourse Forum Admin Dashboard for the MCNP forum. The left sidebar contains navigation links: Back to Forum, Search, Dashboard, Users, Groups, All site settings, What's new?, and Manage account. The main content area is titled 'Reports' and includes a description: 'Reports are a powerful tool to help you understand what's happening on your site. They can help you identify trends, spot problems, and make decisions based on data. • Learn more...'. Below this is a 'Posts' section with the heading 'New posts created during this period'. A table shows the number of posts created per day from April 28, 2025, to May 16, 2025. The table has columns for 'Day' and 'Count'. To the right of the table are filters for 'Dates (UTC)' (04/28/2025 to 05/29/2025) and 'Category' (All categories). Buttons for 'Export' and 'Refresh Report' are also present.

Day	Count
April 28, 2025	2
April 29, 2025	14
April 30, 2025	7
May 1, 2025	21
May 2, 2025	1
May 5, 2025	6
May 6, 2025	8
May 7, 2025	8
May 8, 2025	2
May 9, 2025	1
May 12, 2025	1
May 13, 2025	1
May 14, 2025	3
May 15, 2025	3
May 16, 2025	1

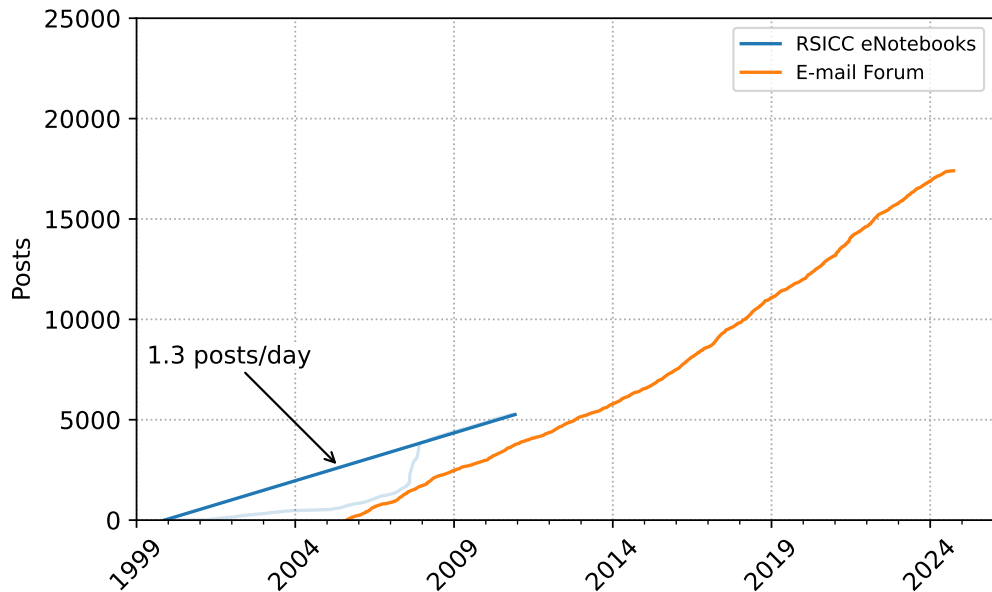
Forum Posts



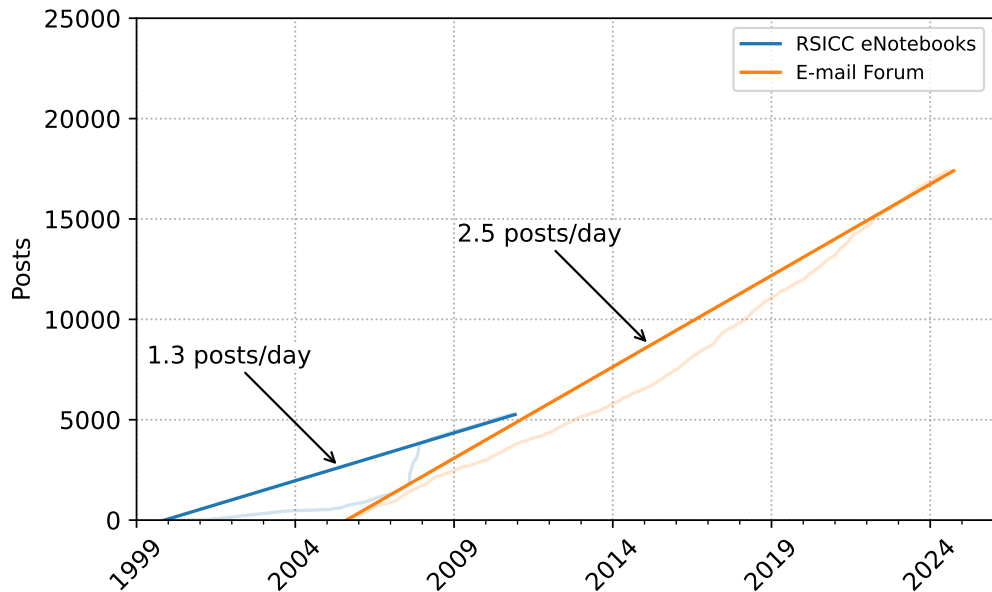
Forum Posts



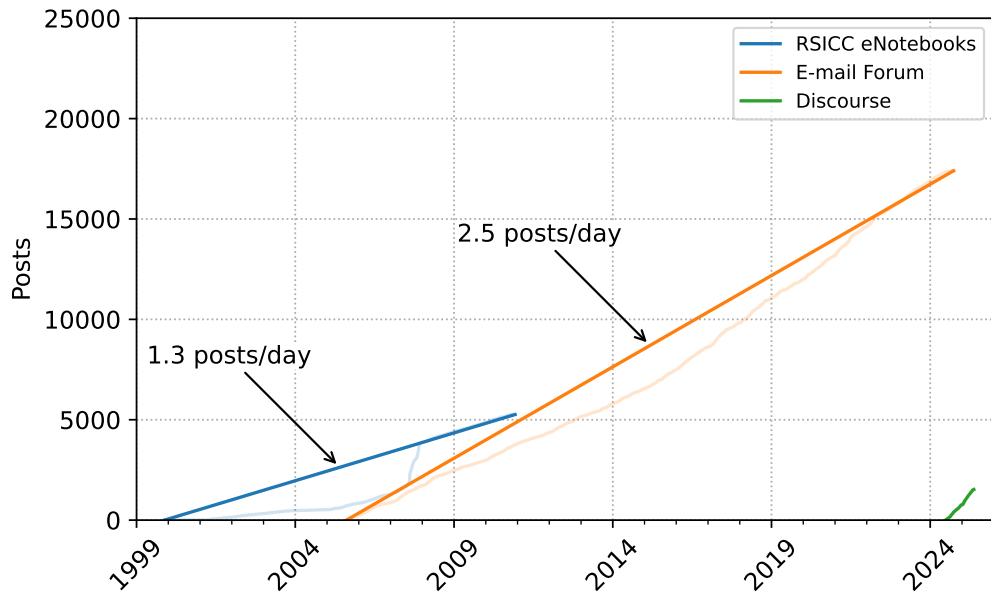
Forum Posts



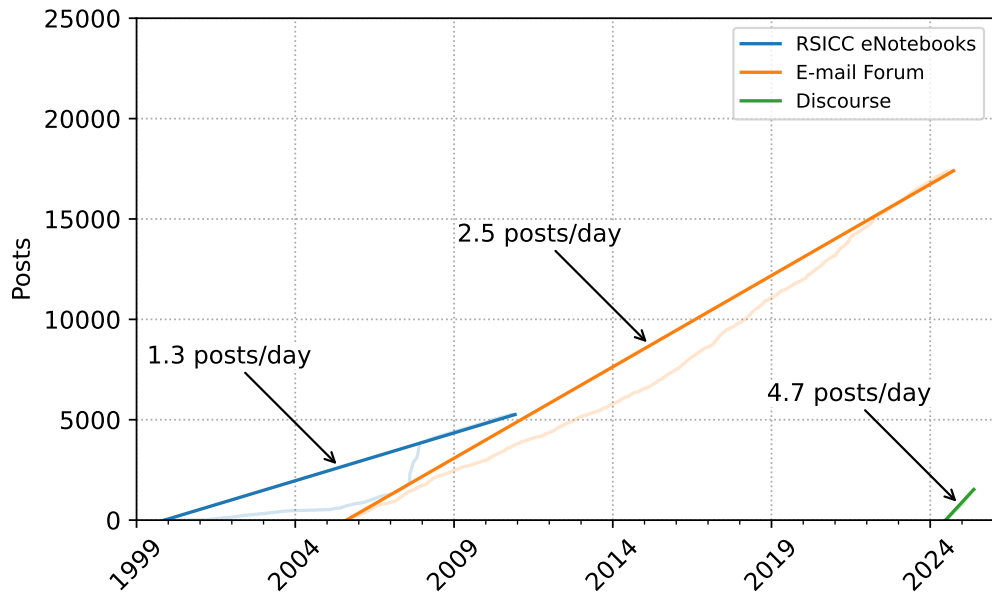
Forum Posts



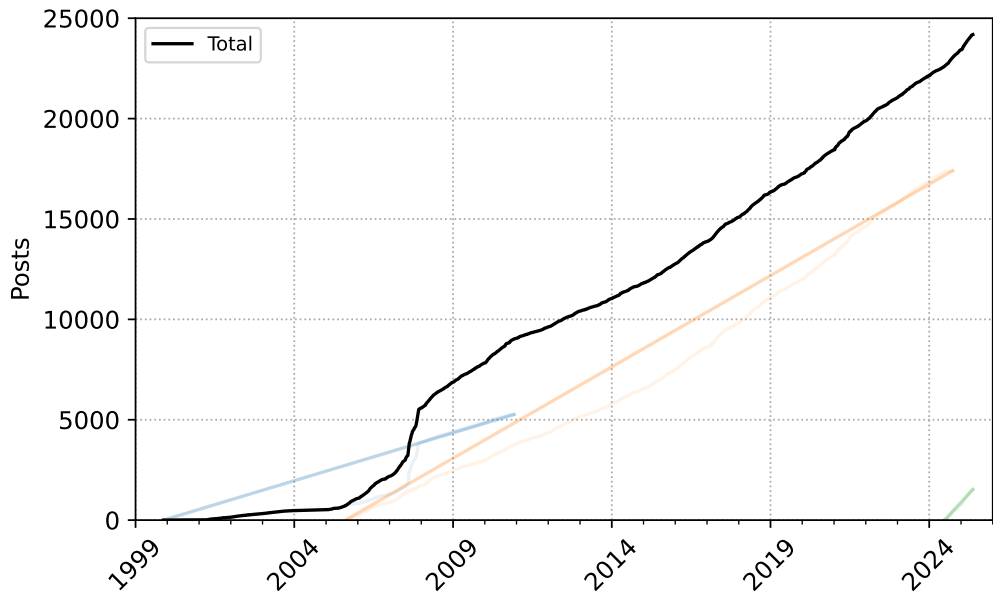
Forum Posts



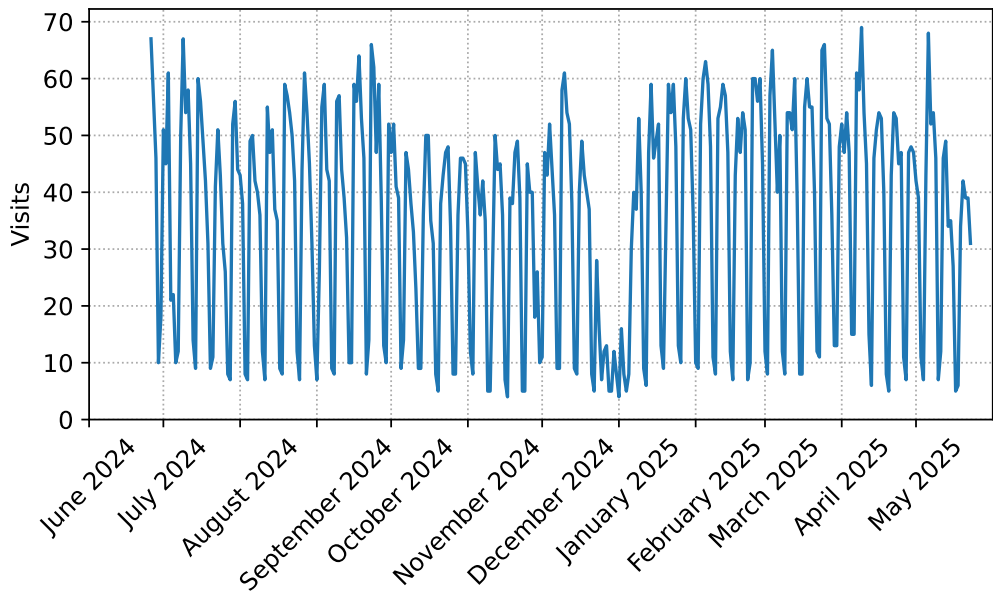
Forum Posts



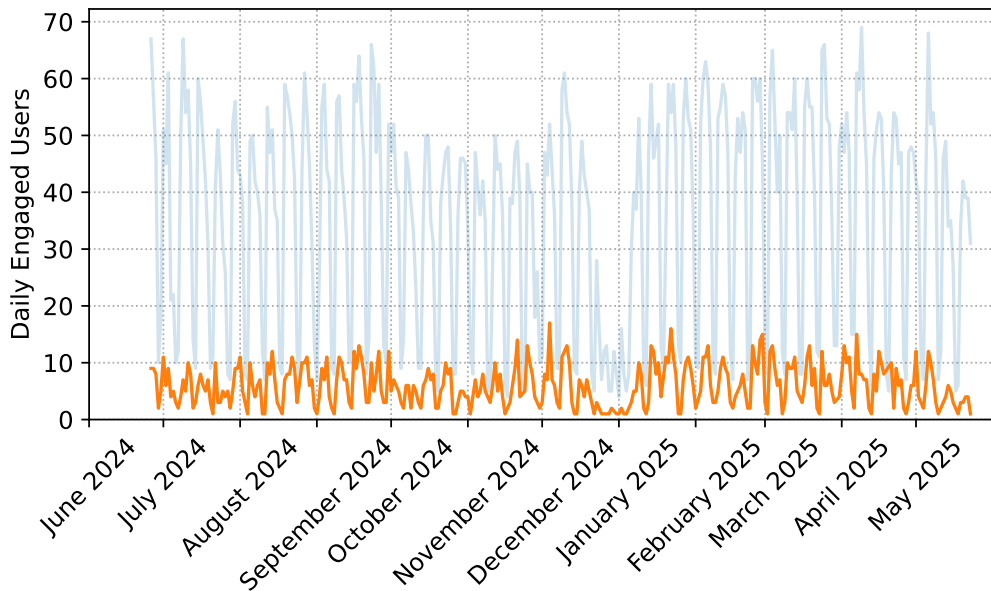
Forum Posts



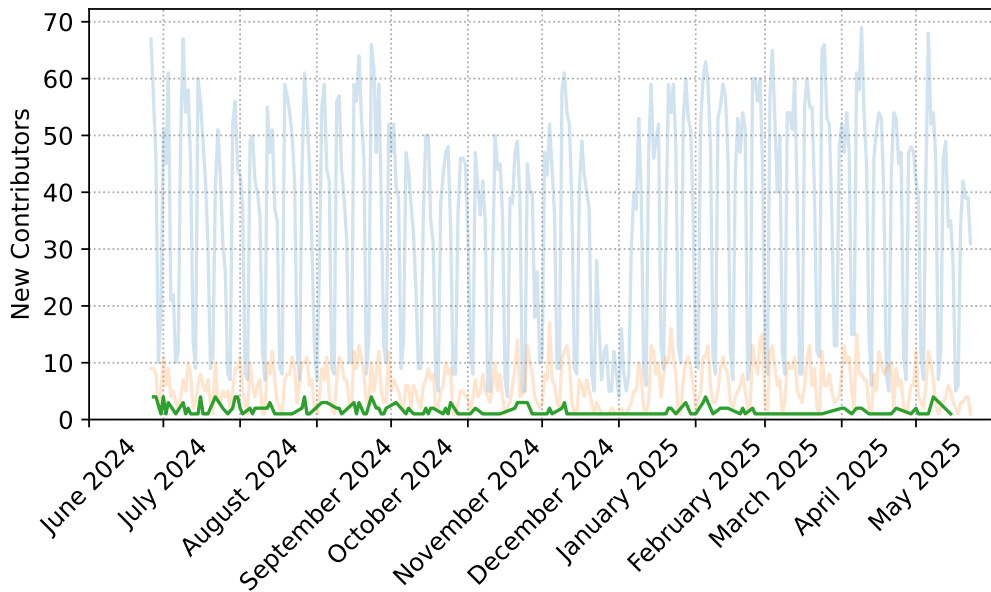
Discourse Daily Activity



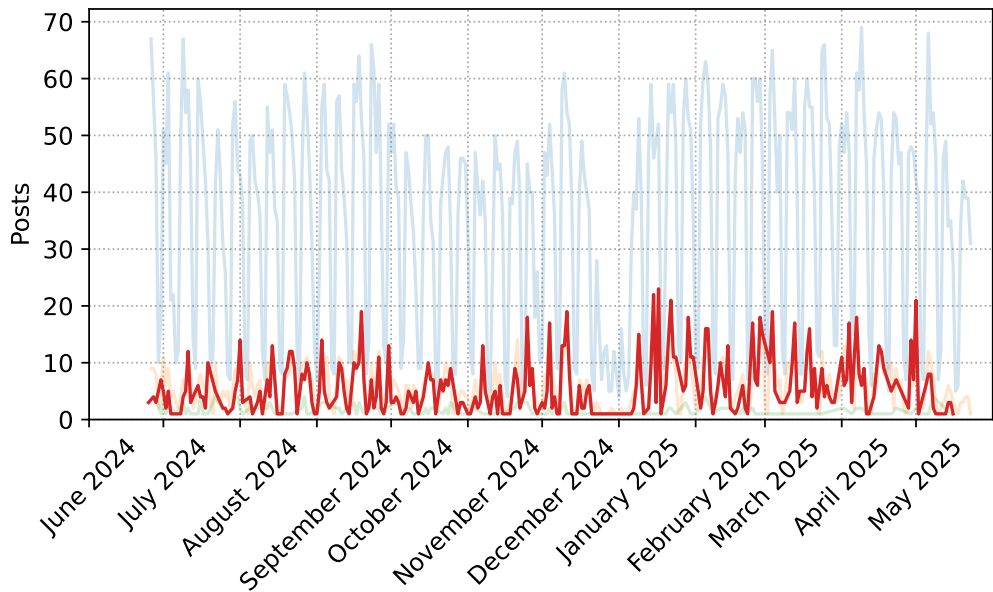
Discourse Daily Activity



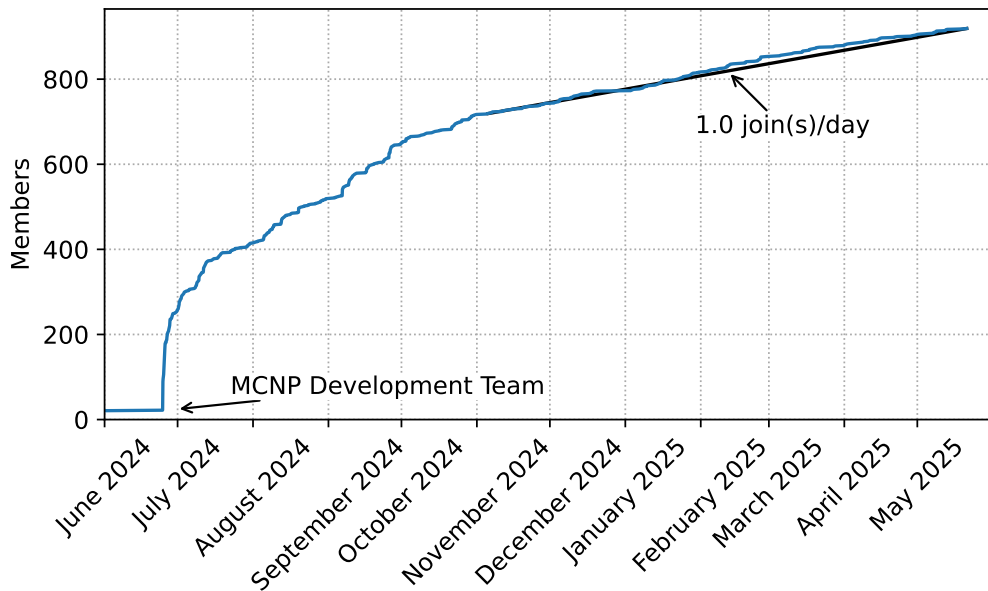
Discourse Daily Activity



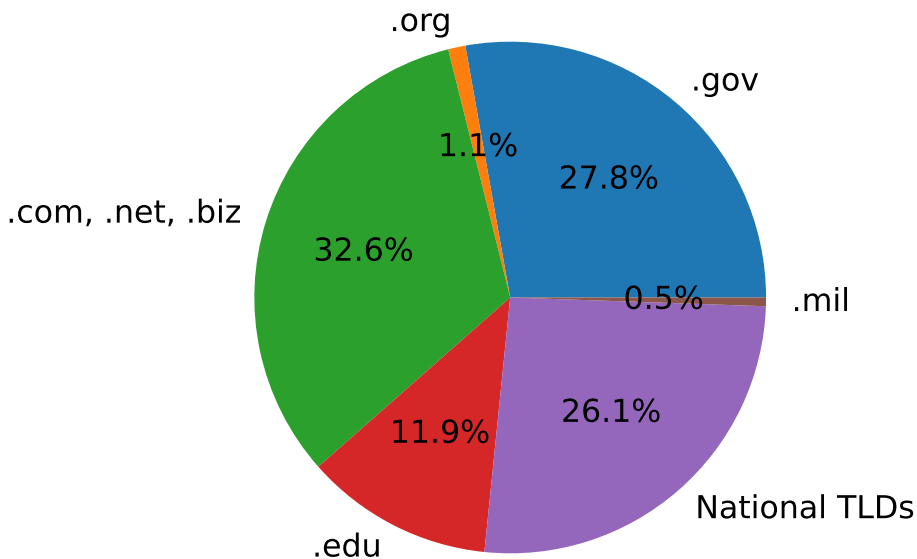
Discourse Daily Activity



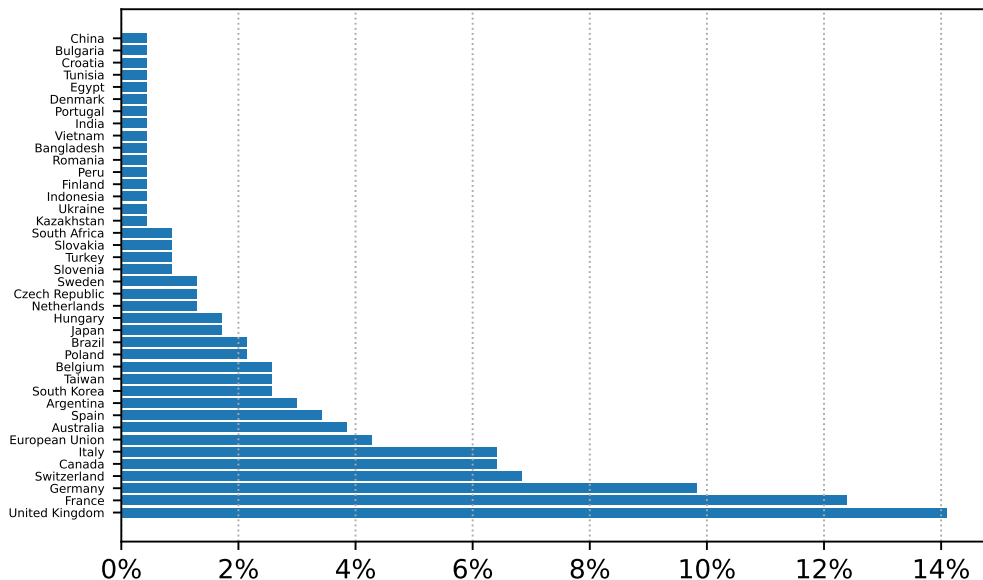
Discourse Member Population



Discourse Member Composition



Discourse Non-US Member Nationalities



Closing Remarks

- ▶ The Forum has evolved over roughly 25 years, with thousands of members
- ▶ Regular growth in frequency of use as new technology is adopted
- ▶ Join now—but, please provide the details requested when joining!

Joining the MCNP Forum

To join the MCNP Forum:

- Navigate to the [MCNP Forum webpage](#)
- Click the "Sign Up" button
- Supply your user name and your **full name and email associated with your MCNP license** in the appropriate boxes
 - Your user name can be used for "@username" mentions on the message boards
- You should soon after receive an email with a confirmation link
- Click the confirmation link, and a forum administrator will review your request to join and may follow-up for additional information to confirm your MCNP license

full name and email associated with your MCNP license



Welcome to MCNP Forum

A place for users and developers to ask questions and share information with each other.

[Sign Up](#)

[Log In](#)

Welcome!

Email

Never shown to the public (initial signups must use a non-anonymous email address that matches the affiliation on your RSICC MCNP request).

[Sign Up](#)

Already have an account?

[Log In](#)

Questions?

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Posts

Daily Activity

Member Behaviors & (Anonymized) Composition

Contact Information

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jkulesza@lanl.gov

Backup Slides

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References

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References

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Abstract

This talk describes the history the MCNP Forum characterized by its three epochs of delivery: the RSICC notebooks, the email-based forum, and the Discourse-based forum. Post frequency, member composition, and other facts and figures are provided along with context given by the historical release cadence of the MCNP code itself.