

 **National Spherical Torus eXperiment Upgrade**

NSTX-U / Magnetic Fusion Science Meeting

October 11, 2021

Some upcoming events

- Nov. 8-12, 2021 (Pittsburgh / hybrid), [APS-DPP](#) (invited deadline: ~~May 26~~)
- Nov. 30 - Dec. 3, 2021 (Chengdu / hybrid), [4th IAEA TM on Fusion Data Processing, Validation and Analysis](#) (~~abstract deadline: Sept. 15~~)
- Dec. 6-9, 2021 (virtual), [IAEA Technical Meeting on Energetic Particles](#) (deadline: Oct. 6)
- Dec. 12-16, 2021 (Denver), [IEEE-SOFE & PPC](#) (~~deadline: Aug. 15~~)
- PSI-25 Jun. 12-17 (Jeju Island, South Korea), PSI-25 (deadline: Nov 30)
- June 27-July 1, 2022 (Maastricht), [EPS Conf. Plasma Physics](#) (deadline for invited: Oct. 29)

APS-DPP remains hybrid format

- [Sept. 3 announcement from Mike Brown](#)
- [Sept. 14 PPPL email](#): DOE travel ban is still in effect. Please register for virtual APS attendance.
- **Tuesday Nov. 2** scheduled for NSTX-U / ST oral dry runs
 - [ST session UO08](#): Devon Battaglia, Xin Zhang, James Yang, Weixing Wang, Mate Lampert, Tom Looby, Promise Adebayo-Ige, Masa Ono
 - [Pedestal session ZO07](#): Andreas Kleiner, Walter Guttenfelder
 - [Session CO07: MFE: Turbulence and Transport I](#): Nirmal Bisai

Columbia Energy Tech Revolution Forum tomorrow (Tues, Oct. 12, 12pm ET)

“Fusion: No Longer Thirty Years Away”

- Hosted by Paul Dabbar (former DOE Under Secretary for Science)
- Sir Steven Cowley (Director, PPPL)
- Dr. Robert Mumgaard (CEO, CFS)

“The discussion will focus on the state of fusion technologies, how fast until we get to a net-out containment, and energy policies to drive from net-out containment to commercial fusion plants.”

- [Registration required for Zoom link](#)

Please join Science Working Group email list (intention is for some SWGs to start meeting)

The screenshot shows the NSTX-U website with a navigation menu on the left and a main content area. A red oval callout on the left points to the 'Group Links / Files / Email' link in the menu. Another red oval callout on the right points to the 'Research Team Info and Governance' link in the 'Quick Links' section.

Link to join email groups

Links to governance, Science Working Group structure

NSTX-U National Spherical Torus eXperiment Upgrade

Home Meetings Drag & Drop Calendars Phone Book Sitemap

- NSTX-U Web Pages:**
- Home
 - Overview
 - Mission
 - Accomplishments
 - Collaboration Info
 - Data Management Plan
 - Diagnostics
 - Five Year Plans
 - Group Links / Files / Email
 - Joint Research Targets
 - Milestones
 - Operations
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 - Outreach Seminars
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 - Reports - Weekly
 - Reports - Quarterly
 - Remote Connection Info - Zoom
 - Research Forum - 2015
 - Researcher Onboarding
 - Roles and Responsibilities
 - Run Coordination
 - Run Schedule Calendar
 - Science Groups
 - Scientific Conferences
 - Software
 - Surface Science
 - Task Forces
 - User Information Form



Upcoming and Past NSTX-U Meetings:

- [NSTX-U/Theory Partnership Presentations \(June 8, 2021\)](#)
- [Program and Collaboration Presentations \(Feb-March 2021\)](#)
- [2021-2025 NSTX-U Five Year Plan \(PDF\)](#)
- [NSTX-U IAEA-FEC 2021 Contributions](#)

Quick Links for Additional Information:

- [Monday Physics Meetings](#)
- [Research Team Info and Governance](#)
- [NSTX-U Recovery Status](#)
- [Information for Collaborators](#)
- [NSTX-U Status and Run Schedule](#)
- [Experimental Proposals](#)

FYI: Much information found at nstx-u.pppl.gov

The screenshot shows the NSTX-U website interface. At the top, the navigation menu includes Home, Meetings, Drag & Drop, Calendars, Phone Book, and Sitemap. A search bar is located on the right. The main content area features a header with logos for the U.S. Department of Energy, Office of Science, PPPL, and NSTX-U. Below the header is a large group photo of the staff. The left sidebar contains a 'NSTX-U Web Pages:' menu with numerous links. Two callouts point to specific links in this menu: 'Link to Data Management documentation' points to 'Data Management Plan', and 'Link to yearly Research Milestones' points to 'Milestones'. A third callout, 'Link to Monday seminar slides', points to 'Monday Physics Meetings' in the 'Quick Links for Additional Information:' section. A fourth callout, 'Links to: 5YP, Last PAC slides, Year end reports', points to the 'Upcoming and Past NSTX-U Meetings:' section. A fifth callout, 'A number of links & pages need updating', points to the entire sidebar menu area.

Link to Data Management documentation

Link to yearly Research Milestones

Links to: 5YP, Last PAC slides, Year end reports

Link to Monday seminar slides

A number of links & pages need updating

NSTX-U

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Search this site

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- Working Groups

U.S. DEPARTMENT OF ENERGY Office of Science PPPL NSTX-U

Upcoming and Past NSTX-U Meetings:

- [2021-2025 NSTX-U Five Year Plan \(PDF\)](#)
- [NSTX-U IAEA-FEC 2018 Contributions](#)
- [NSTX-U FY2019 Year-End Report](#)
- [NSTX-U Research PAC-41 Meeting - May 13-14, 2020](#)

Quick Links for Additional Information:

- [Monday Physics Meetings](#)
- Presentation templates:
 - 4x3: [PPT](#) [PPTX](#) [LaTeX](#)
 - 16x9: [PPT](#) [PPTX](#)
 - [Templates and Graphics Folder](#)
 - Hi-res [NSTX-U cross-section](#) image (for illustration purposes only)

Much information on data usage, access, publishing, archiving

Data Management Plan - NSTX-U

nstx-u.pppl.gov/data-management-plan

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Data Management Plan

The NSTX-U Data Management Plan (DMP) describes the elements of data from measured to analyzed and also describes the resources available for the data management and preservation during the course of research operations. In addition, this page describes the resources available for sharing of data and provides a link to user requirements for data access. Finally, web links to the NSTX-U and PPPL computing and analysis resources are provided. Any NSTX-U data management plan questions should be directed to the NSTX-U Head of Physics Analysis: Stan Kaye (kaye@pppl.gov).

I. Data Categories

Data from NSTX-U discharges will be obtained from a suite of diagnostics measuring a broad range of plasma characteristics. The three main categories of NSTX-U data are raw, reduced, and analyzed.

A. Raw

Raw (measured) data may take the form of voltages, emissivities, etc, and are not directly useable as input to higher level analysis routines. The raw data will be:

1. OD - temporally and spatially constant information during the course of a plasma discharge such as fixed operational settings, device/facility conditions, etc.
2. 1D - temporally varying measurements (magnetic fluxes, neutron rates, etc.), or spatially varying data taken only at one time
3. 2D - measurements that vary both in time and space (kinetic profiles, etc.)
4. 3D - temporally varying 2D images (visible camera, gas puff imaging, etc.)

B. Reduced

Raw data will be converted to reduced data through diagnostic-specific analysis software. Reduced data will be in real physics units (e.g., temperatures, densities, etc.), and once validated by the responsible diagnostician, can be used as input to high level analysis codes. A listing of NSTX-U diagnostics, units for the measurements, and the person responsible for the diagnostic is provided [here](#).

C. Analyzed

Validated reduced data that has been synthesized through direct analysis or through higher level analysis codes. Analyzed data, along with some validated reduced data, form the basis for figures and physics conclusions presented in publications.

II. Data Management Resources, Storage, and Archival

Data usage, access, publications & presentations

- [Data Usage Agreement](#) should be filled out by all collaborators intending to present & publish data, analysis and/or modeling
 - **Data access:** If you don't already have access, reach out to your PPPL research contact

Publications

- Prior to journal submission, should email Head of Physics Analysis (wgutten@pppl.gov) to distribute for ~1 week Team review
- Data in figures should be [archived](#) ([instructions](#), [how-to guide](#)) & the ARK link should be included in the paper
- First PPPL author is responsible for submitting draft (and eventual Accepted Manuscript) to [Publications Office](#) for review, patent clearance and OSTI archiving

Please read the webpages to educate yourself on your responsibilities

Talk & poster presentations

Archive of slides in this [DragNDrop directory](#) (not sure how up-to-date this is)

- *Bigger conferences (APS, EPS, IAEA, TTF, Sherwood)*: we ask that you do a dry run with appropriate Team members (these will typically be Team-coordinated, especially APS & IAEA)
- *Smaller conferences*: as a courtesy (mostly for awareness) we ask you to please email Head of Research (skaye@pppl.gov) and Head of Physics Analysis (wgutten@pppl.gov) that you are contributing
- *Seminar and outreach talks*: no communication required; however, we are (were) keeping a [directory](#) of [Outreach talks](#) to which we would happily update and add new talks for future reference