

# Fermi Summer School Analysis Tutorial Setup

- The [Confluence wiki schedule page](#) provides links to tutorial videos, notebooks, reference material and additional resources.
- Please turn your camera on if you are comfortable doing so and don't have bandwidth issues. It really helps us to see you.
  - We will not record the lectures to create a safe space for learning
- Go to **Slido.com** and enter **code #420474** for questions and polls today
  - Type in questions during the session (anonymous unless you log in to slido)
  - Upvote the questions of others
  - Raise your hand in Teams to ask an oral question
- The tutorial session will be in 3 parts
  - 1: Discussion of exposure and response functions with time for questions and discussion
  - 2: Breakout into Groups for an activity
  - 3: Return to main meeting to share responses, see examples, and introduce next steps
- *Don't panic! Team members will be available following the tutorial for follow up questions and to work with you on running FermiBottle, the Fermitools and analysis notebooks*

## Week 2 Group Activity: Characterizing the Large Area Telescope

- Introduce yourselves to each other.
- Discuss the question assigned to your group. You will have about 20 minutes to do this.
- Pick one person to present your group discussion when we return to the main meeting room.
- Question A (Groups 1,2,3)
  - **Pointing** – How do we know where the LAT is pointing? When a gamma ray is detected in the instrument we need to figure out where it came from in the sky. Talk about some things we might need to know to figure out where LAT is pointing and consider some ways we could check the pointing accuracy.
  - Bonus: What is LAT's pointing accuracy?
- Question B (Groups 4,5,6)
  - **Point spread function** – The measured direction of a gamma ray differs from its true direction because of LAT's finite resolution. The point spread function describes the distribution of measured directions in the instrument for a point source. How could you measure or check the point spread function for LAT?
  - Bonus: What is LAT's angular resolution?
- Question C (Groups 7,8)
  - **Energy dispersion** – The measured energy for a gamma ray differs from its true energy because of LAT's finite resolution. Energy dispersion describes the distribution of measured energies in the instrument. What types of analysis need a good knowledge of the energy dispersion?
  - Bonus: What is LAT's energy resolution?

Hint: The FSSC Cicerone is your friend.

# Support team members

- General questions about SSC software support, the data server, and user resources – Don Horner
- FermiBottle, Fermitools, conda, software – Alex Reustle, Joe Asercion
- Data server, python – Tom Stephens
- Fermi observations, Fermitools and accessing data – Joe Eggen
- Fermitools and documentation, catalogs and user resources – Nestor Mirabal
- Questions about the mission and instruments – Liz Hays and Judy Racusin
- We'll add additional experts and specialists throughout the school.

You (and anyone who wants to analyze Fermi data) are welcome to send questions about Fermi analysis to the **Fermi help desk** [fermihelp@milkyway.gsfc.nasa.gov](mailto:fermihelp@milkyway.gsfc.nasa.gov). This is available all the time and is not specific to the school.

Find Fermi online resources at <https://fermi.gsfc.nasa.gov/ssc>

# Ways to get help

- Go to our Gather platform after the tutorial session to chat with team members
- Interact with team members, community experts and other students on slack (useful channels are #2021, #helpdesk, and #fermipy)
  - Invitation link included in the e-mail today.
- Visit office hours on Gather on Thursday at 10 am EDT
- Send e-mail to [fermihelp@milkyway.gsfc.nasa.gov](mailto:fermihelp@milkyway.gsfc.nasa.gov) (available all the time)