Proposal for a BOF/Session at 2025 CHPC National Meeting.

- We would kindly ask for a slot on December 2nd.

Please provide the following information for the proposed short course or tutorial workshop. It is not necessary to fill in everything, complete as much as you can to help us evaluate the proposal.

Title of Workshop: Supercomputing for Sustainability: Balancing Performance and Energy

Lecturer(s): Name, Affiliation, Email Address

1. Ewa Deelman, University of Southern California, deelman@isi.edu
2. Dan Stanzione, Texas Advanced Computing Center, dan@tacc.utexas.edu
3. Dieter Kranzlmüller, Leibniz Supercomputing Centre, dieter.kranzlmueller@lrz.de
4. Maximilian Hoeb, Leibniz Supercomputing Centre, Maximilian.hoeb@lrz.de

Description: *As will appear on the conference web site and programme.*

High-performance computing and AI are at the heart of modern cyber-infrastructure, enabling the transformation of massive data sets into knowledge and decisions. Yet, as system scale and complexity grow, so do the challenges of energy consumption, sustainability, and efficient data movement. This BOF will explore strategies to balance performance with energy efficiency in large-scale systems while ensuring that scientific computing remains productive and impactful.
Key discussion points include how future HPC and AI infrastructures can be designed and operated to reduce energy demand, how infrastructure choices affect sustainability, and how new approaches in scheduling, data management, architectures, and workflow design can align scientific progress with environmental responsibility. By bringing together several perspectives, the session aims to identify practical directions for sustainable supercomputing that can meet the dual challenge of handling ever-larger data sets while supporting informed decisions for science and society.

Duration: *(delete the option not applicable)* X 60-90 min

Size: *(max number of delegates)* many

Target Audience: *(who should attend this tutorial)* All delegates

[If available, include or attach a list of names and email addresses of anyone who has already expressed interest in attending this tutorial or that the CHPC should specifically invite.]

Prerequisites: *(what previous knowledge or skills should the attendees have)* Not applicable

Type of workshop: BOF or regular conference session

Special requirements: *(will the attendees need to bring a laptop; have* We will bring a Laptop and HDMI connection would be good to have.

access to the cluster, or
specific software; etc.)

Timetable: Please provide an outline of full syllabus:

Based on a 60-minutes slot, we propose the following timetable; of course, the titles need to be updated with the final version:

0:00 - 0:05 (5 min) | Welcome & Introduction (Maximilian Hoeb)

0:05 - 0:12 | Dan Stanzione (TACC): "Scaling Sustainably"

0:12 - 0:19 | Ewa Deelman (USC): "Greener Code"

0:19 - 0:26 | Speaker (tba): "The Sustainable Edge"

0:26 - 0:33 | Dieter Kranzlmüller (LRZ): "Cool Compute"

0:33 - 0:55 (22 min) | Moderated Panel Discussion & Audience Q&A

0:55 - 1:00 (5 min) | Closing Remarks & Call to Action

All parts can be enlarged, if the session has 90 minutes.

Sunday (30 Nov 2025)

08:00	Registration
09:00	
10:30	Morning Refreshment Break
11:00	
12:30	Lunch
13:30	
15:00	Afternoon Refreshment Break
15:30	
17:00	Intermission
18:00	
19:30	
21:00	End of evening session

For 90 minute workshop, only complete <u>one</u> session black; for a ½-day workshop only fill in <u>two</u> session blocks. We cannot guarantee that your preferred session choice (morning or afternoon) will be available as we have to schedule the timetable according to available venues. Afternoon workshops can take advantage of an additional 3h session in the evening.

Additional Comments: