



# POCPA7

## Power Converters for Particle Accelerators Closing Remarks

May 31 – June 02, 2023

Kent Holland

Facility for Rare Isotope Beams

**MICHIGAN STATE**  
UNIVERSITY

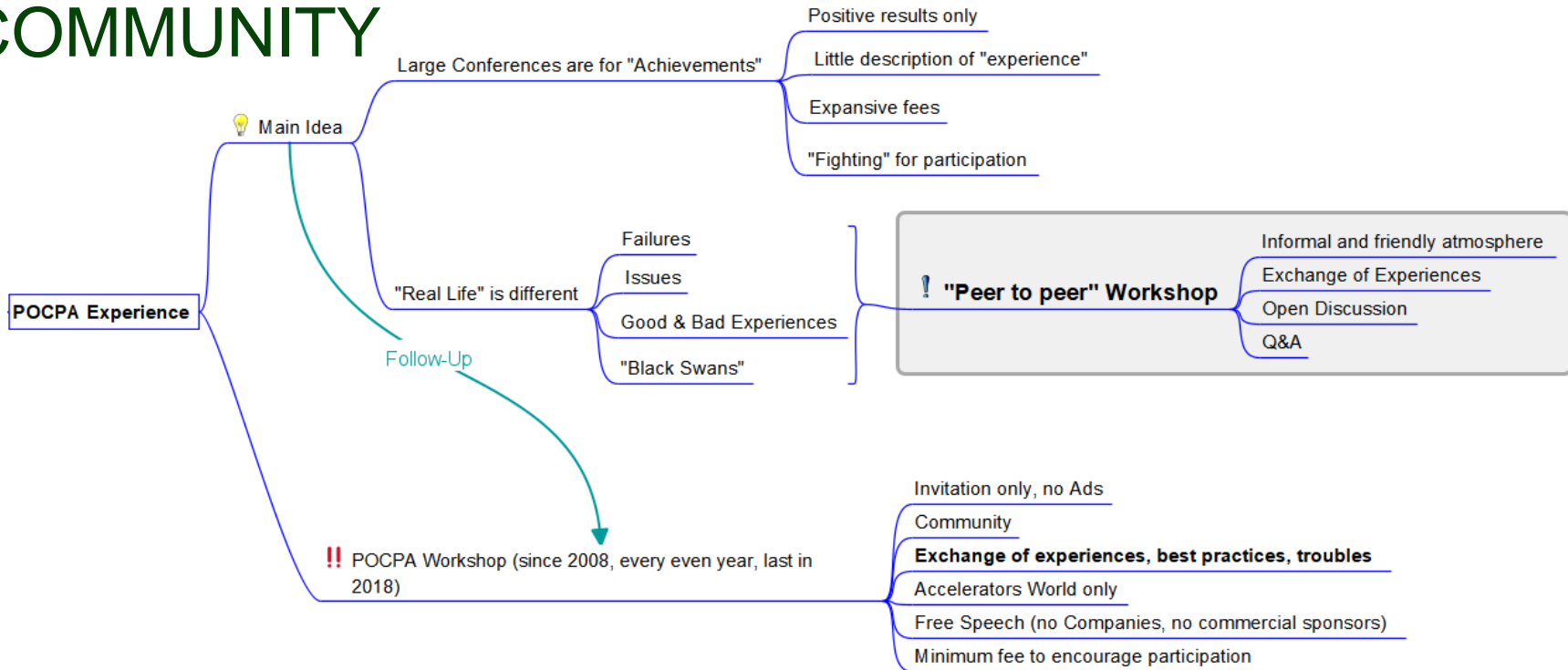


U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

# POCPA7, The "POCPA Spirit"

- Informal
- Exchange of ideas and sharing good and bad experiences in the field of Power Converters
- COMMUNITY



# POCPA7, The POCPA Program

- 7 sessions
- 29 Talks
- Technical Visit
- Coffee, lunches, dinners
  - Many opportunities for discussions

**7th Workshop on Power Converters for Particle Accelerators**

May 31, 2023, 8:00 AM → Jun 2, 2023, 5:30 PM Europe/Zurich

Technology and Research Center, Wiener Neustadt, Austria

Ivan De Cesaris

**Description**

Power Converters are critical components in the performance and the operation of Particle Accelerators. Meetings - scheduled or informally organised - during International Conferences either on Particle Accelerators or Power Electronics are not the best way for exchanging experiences and ideas. POCPA Workshop devoted to the specific field of Power Converters for Particle Accelerators aimed to group specialists in this field from the particle accelerator laboratories worldwide for a two-days meeting and to organise a true round-table on selected topics.

Wednesday, May 31

9:00 AM → 12:20 PM **Arrival at MedAustron**

12:30 PM → 1:30 PM **Lunch**

1:30 PM → 3:00 PM **Session 1**  
Convener: Hans-Jörg Eckoldt

- 1:30 PM **Welcome to MedAustron** 20m  
Speakers: Gerald Höllinger, Ludwig Gold
- 1:50 PM **POCPA 7th** 15m  
Speaker: Roberto Visintini
- 2:05 PM **Organization and Logistic of POCPA 7th** 15m  
Speakers: Ivan De Cesaris, Karina Proksch
- 2:20 PM **GaN FET modular Power Converter for MedAustron** 20m  
Speaker: Thomas Margreiter
- 2:40 PM **SOLEIL power supply reliability** 20m  
Speaker: François Bouvet

3:00 PM → 3:30 PM **Coffee**

3:30 PM → 6:00 PM **Session 2**  
Convener: René Künzi

- 3:30 PM **Reliability and Component Ageing with highlight on Electrolytic capacitors and Batteries** 25m  
Speaker: Gilles Le Godec (CERN)  
CERN\_Reliability an... CERN\_Reliability an...
- 3:55 PM **Reliability in MedAustron Power Converters** 25m  
Speaker: Rui Teixeira Alen
- 4:20 PM **Power Converters for ELETTRA 2.0** 25m  
Speaker: Marco Cautero
- 4:45 PM **FRIB Construction, Commissioning, and Operation Status Update** 25m  
Speaker: Kent Holland
- 5:10 PM **Electron Ion Collider Power Supplies** 20m  
Speaker: Don Bruno
- 5:30 PM **Rapid Cycling Synchrotron (RCS) dipole power supplies** 30m  
Speaker: Edward Bajon

6:30 PM → 10:30 PM **Informal Dinner: "Gaethaus" <https://www.gaethauszumdom.at/>**



Becoming a patient About Treatment About us Career



**FRIB**



**Facility for Rare Isotope Beams**  
U.S. Department of Energy Office of Science  
Michigan State University

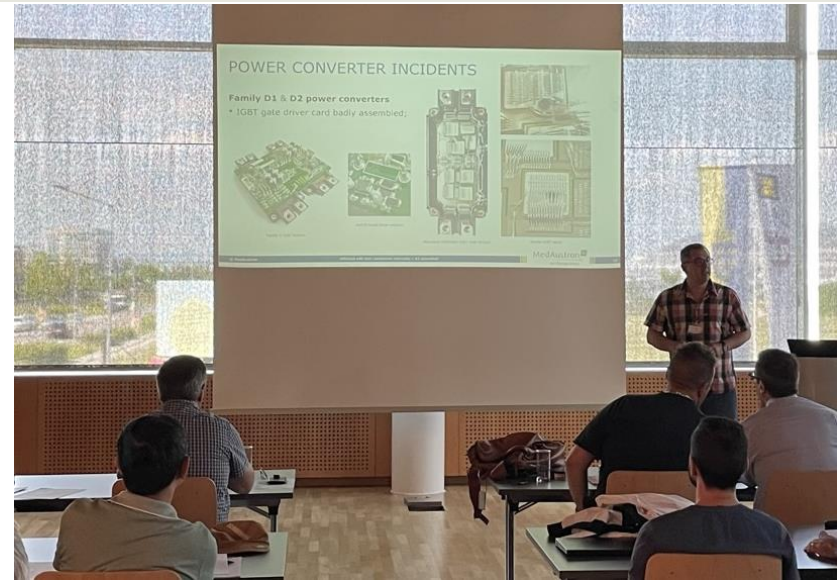
# POCPA7, Talks [1]

- Intro and History of the area
  - Records - 55 Specialists (26 “1st-timers”), 25 Facilities
- Many talks covering the “Reliability & Components Ageing” main topic
  - Experiences on failures, solutions, and lessons learned
  - Statistics, predicting reliability, accelerated aging, improving methods
  - Design guidelines,...
- New designs, topologies, projects
  - Modular, parallel, redundant, hot-swap,...
- Lab updates
  - Standardization, optimization,...





# POCPA7, Talks [2]





# POCPA7, Venue

- The 2023 POCPA Meeting was hosted by the MedAustron Ion Therapy and Research Center. **THANK YOU!!!**
- Technical tour/visit of the MedAustron Accelerator Complex





# POCPA7, The Community [1]

- ✓ Website and mailing list managed by CERN
- ✓ ~140 registered specialists
- ✓ ~38 Facilities worldwide
- ✓ 21 Countries
- ✓ 4 Continents (all besides Africa)

(Data from POCPA website)





# POCPA7, The Community [2]



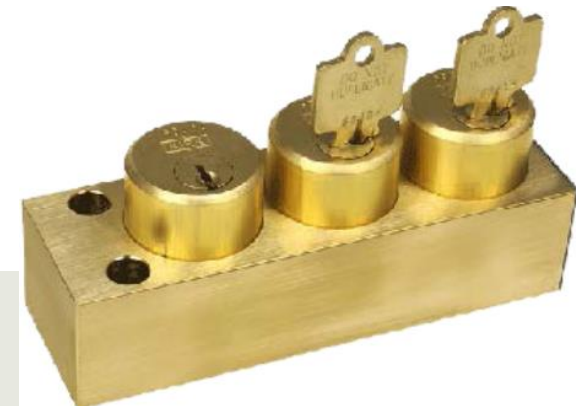


# POCPA8, Topic Proposal “Safety”

- Going home safely every day is always the highest priority
  - Share best practices with “1st-timers”
  - Beware: Complacency, assumptions, schedule pressure, etc.
  - “Error precursors are, by definition, prerequisite conditions for error and, therefore, exist before an error occurs. If discovered and removed, job-site conditions can be changed to minimize the chance for error”

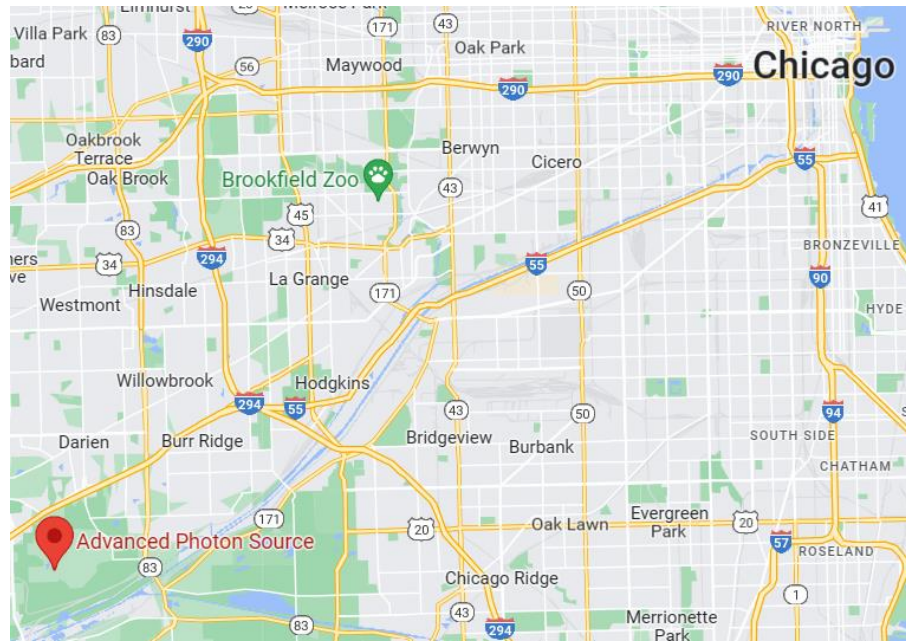
- Engineered controls

- Absence of Voltage testers now common on the market
- Trapped key systems, grounding relays to force the sequence of equipment lock-out



# POCPA8, 2025 Location

- APS, Argonne, Illinois – USA
- “Fall” (early-mid September) 2025
- Who wants to candidate for 2027?  
(in Europe?)



The Advanced Photon Source



**Facility for Rare Isotope Beams**  
U.S. Department of Energy Office of Science  
Michigan State University



# POCPA7, Acknowledgments [1]

## ■ The Scientific Committee

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■ **The Lecturers, thank you for the excellent talks**

■ **The participants, thank you for attendance, and support to set the attendance record**

# POCPA7, Acknowledgments [2]

- The hosting facility - MedAustron Ion Therapy and Research Center. THANK YOU!!!
- **The Local Organizing Committee and PS Staff, thank you for the outstanding organization!!!**
  - Ivan De Cesaris
  - Karina Proksch
  - Petra Wurzer
  - Sebastien Pelletier
  - Rui Alen Teixeira
  - Xavier German
  - Florian Legand
  - Peter Hinderer
  - Thomas Margreiter



# POCPA7, Thank you

▪ We look forward to seeing you in Chicago in 2025

