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RPPR Final Report
as of 27-Jul-2022

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Proposal Number: 76876ELCF **Agreement Number: W911NF-20-1-0121**
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Report Date: 14-Aug-2022 Date Received: 27-Jul-2022
Final Report for Period Beginning 15-May-2020 and Ending 14-May-2022
Title: 7th International Conference on Photoinduced Phase Transitions and Cooperative Phenomena (PIPT7)
Begin Performance Period: 15-May-2020 **End Performance Period:** 14-May-2022
Report Term: 0-Other

Submitted By: Chong-Yu Ruan Email: ruanc@msu.edu
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Distribution Statement: 1-Approved for public release; distribution is unlimited.

STEM Degrees: **STEM Participants:**

Major Goals: The focus of PIPT7 will be on the latest developments in the traditional key areas of photoinduced phase transitions and cooperative phenomena, as well as emerging areas including the discovery of thermodynamically inaccessible states of matter, uncovering new behavior in quantum systems far from equilibrium, and new strategies for controllably realizing desired quantum phases. These advances can provide new routes for guiding materials design and discovery, particularly towards potential applications in photonics, electronics, and quantum information.

PIPT7 is expected to bring together about 100 researchers from USA, Europe, and Japan, and will capitalize on the fact that the area of non-equilibrium ultrafast phenomena is experiencing rapid growth, both in the number of researchers as well as the number of groups worldwide.

Accomplishments: Due to pandemic situations, the scientific committee recently decide to pivot the PIPT7 Conference as a series of mini-symposia to update the most recent progresses in the fields. The symposia will be held in a two-week span from November 8 to 18 in short sessions to accommodate the participants from US, Europe and Asia.

The PIPT7 Conference is organized in 7 symposia and two poster sessions:

- Symposium: Twenty years of PIPT: Review and future perspective; Date: November 8, 2021**
- Symposium: Non-thermal control of quantum materials; Date: November 9, 2021**
- Symposium: Multi-messenger and cross-platform studies; Date: November 10, 2021**
- Symposium: Tailored excitations-from short pulses and high fields to nonlinear phononics and Floquet states; Date: November 11, 2021**
- Symposium: Metastable/long-lived trapped states; Date: November 15, 2021**
- Symposium: Non-equilibrium dynamics of electrons, lattices, and spins; Date: November 16, 2021**
- Symposium: Defects, topology, and non-trivial collective excitations in PIPT; Date: November 17, 2021**

** Scheduled dates are based on Santa Fe time.

It has been a successful event with a large number of the professional researchers participating the events. Even greater numbers are from postdocs and graduate students around the world due to the fact that we opened the virtual conference symposia free of charge to all who work in the related fields.
The total number of participants exceed 250.

RPPR Final Report
as of 27-Jul-2022

Training Opportunities: Nothing to Report

Results Dissemination: With the consent of speakers, we were able to post the speech online, serving as a platform for getting the latest development in ultrafast sciences in condensed matter physics; see https://pipt7.org/mini-symposium-a/

Honors and Awards: Nothing to Report

Protocol Activity Status:

Technology Transfer: Nothing to Report

Partners

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I certify that the information in the report is complete and accurate:
Signature: Chong-Yu Ruan
Signature Date: 7/27/22 5:49AM

7th Conference on Photoinduced Phase Transitions and Cooperative Phenomena (PIPT7)

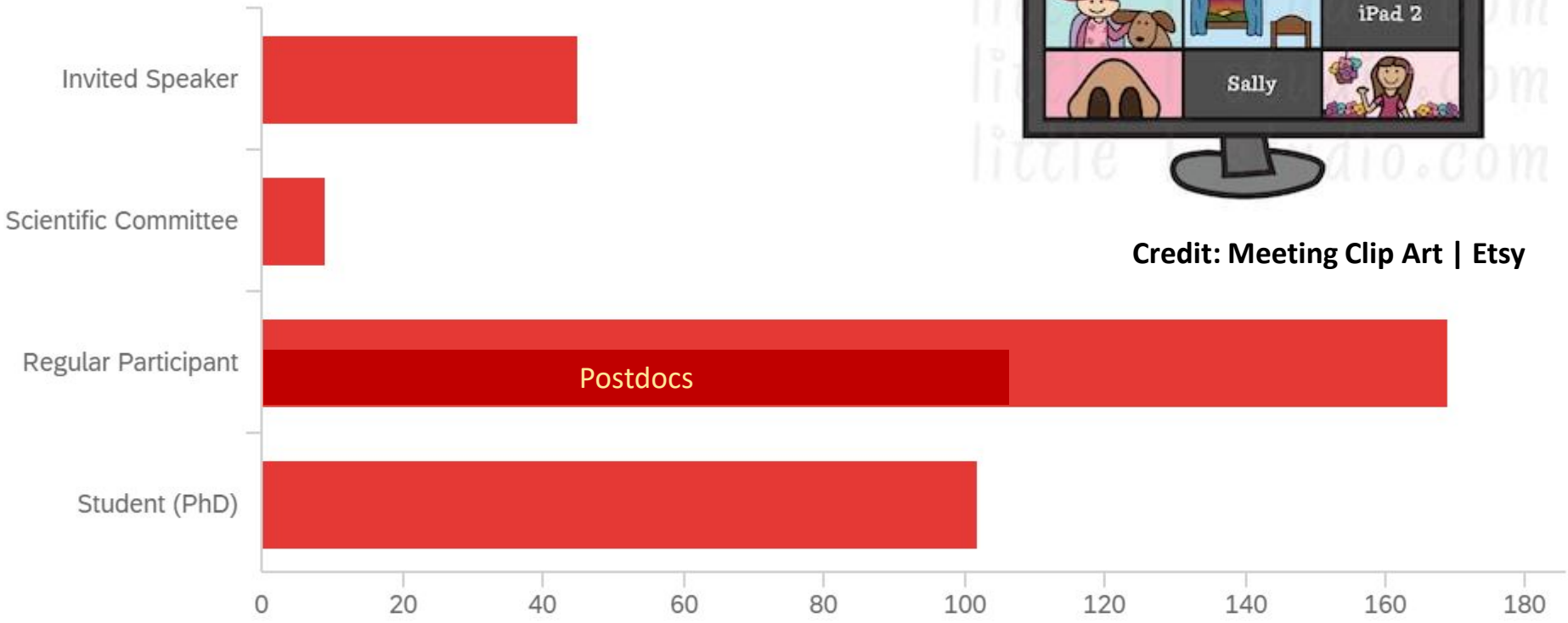
Scheduled: 2020, Santa Fe, US

July 2021, ISC of PIPT7 decided to bring the Conference entirely online due to pandemic.

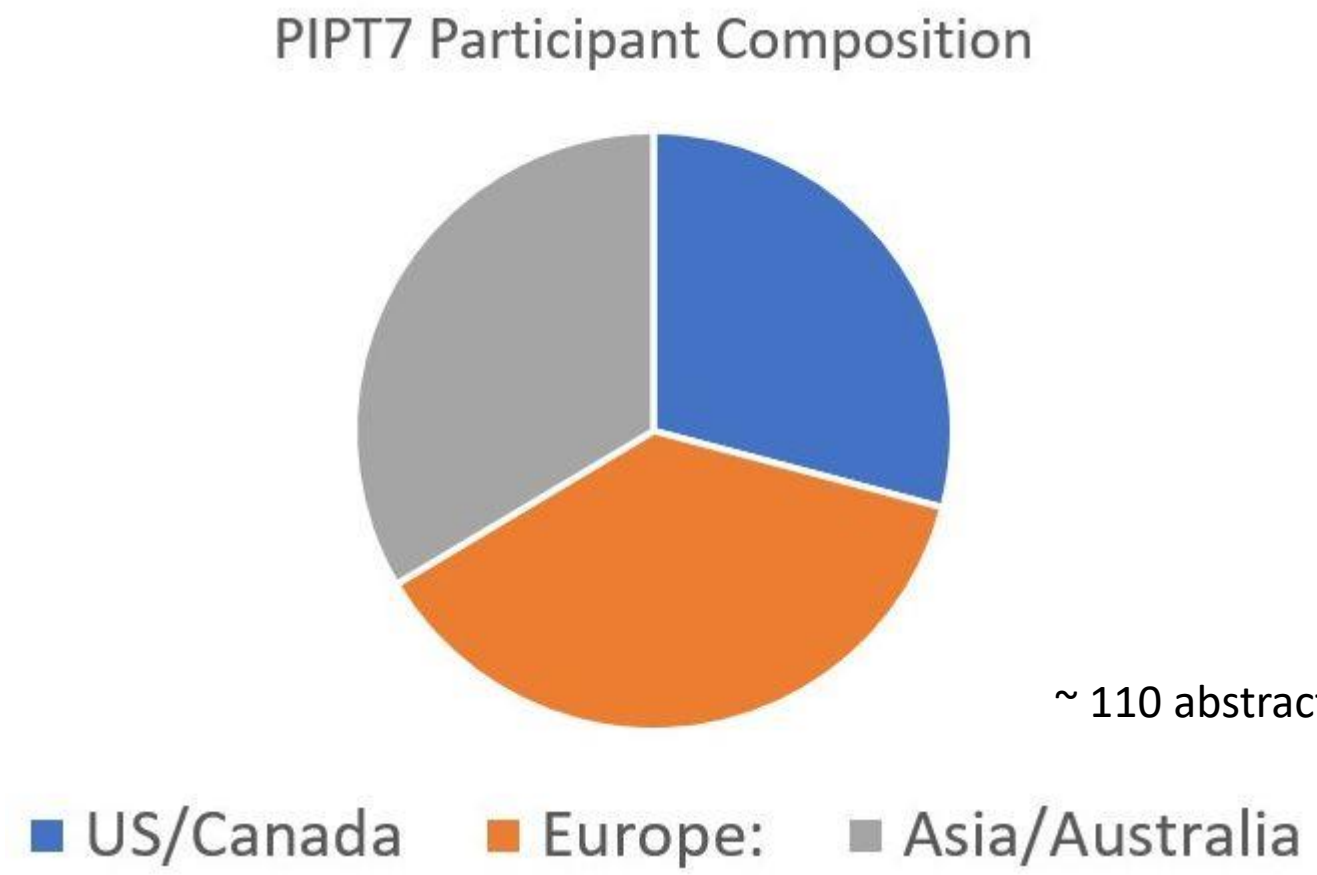
PIPT7 participant profiles

Science continues despite the pandemic!!

Credit: Meeting Clip Art | Etsy



PIPT is a young and vibrant field !!



~ 110 abstracts received.

PIPT is truly an international effort!

PIPT7 in Symposia and Poster Sessions

- **Symposium: Twenty years of PIPT: Review and future perspective**;
  Date: **November 8, 2021****
- **Symposium: Non-thermal control of quantum materials**;
  Date: **November 9, 2021****
- **Poster 1: US and Europe presenters**
  Date: **November 10, 2021****
- **Symposium: Multi-messenger and cross-platform studies**;
  Date: **November 10, 2021****
- **Symposium: Tailored excitations-from short pulses and high fields to nonlinear phononics and Floquet states**;
  Date: **November 11, 2021****
- **Symposium: Metastable/long-lived trapped states**;
  Date: **November 15, 2021****
- **Poster 2: Asia presenters**
  Date: **November 16, 2021****
- **Symposium: Non-equilibrium dynamics of electrons, lattices, and spins**;
  Date: **November 16, 2021****
- **Symposium: Defects, topology, and non-trivial collective excitations in PIPT**;
  Date: **November 17, 2021****

** The date is in US Mountain time (Santa Fe); **Please watch out for the time difference!**

The easiest way to keep the schedule is to import the Zoom webinar schedule (.ics) into your calendar system.

The last email the organizers sent contains a link to retrieve the personalized webinar schedule and pass. You can download it multiple times, but **the link is tracked by your registered email address**.
If you use a business Zoom account but registered in a different account, please remember to switch to the registered account to log in successfully.

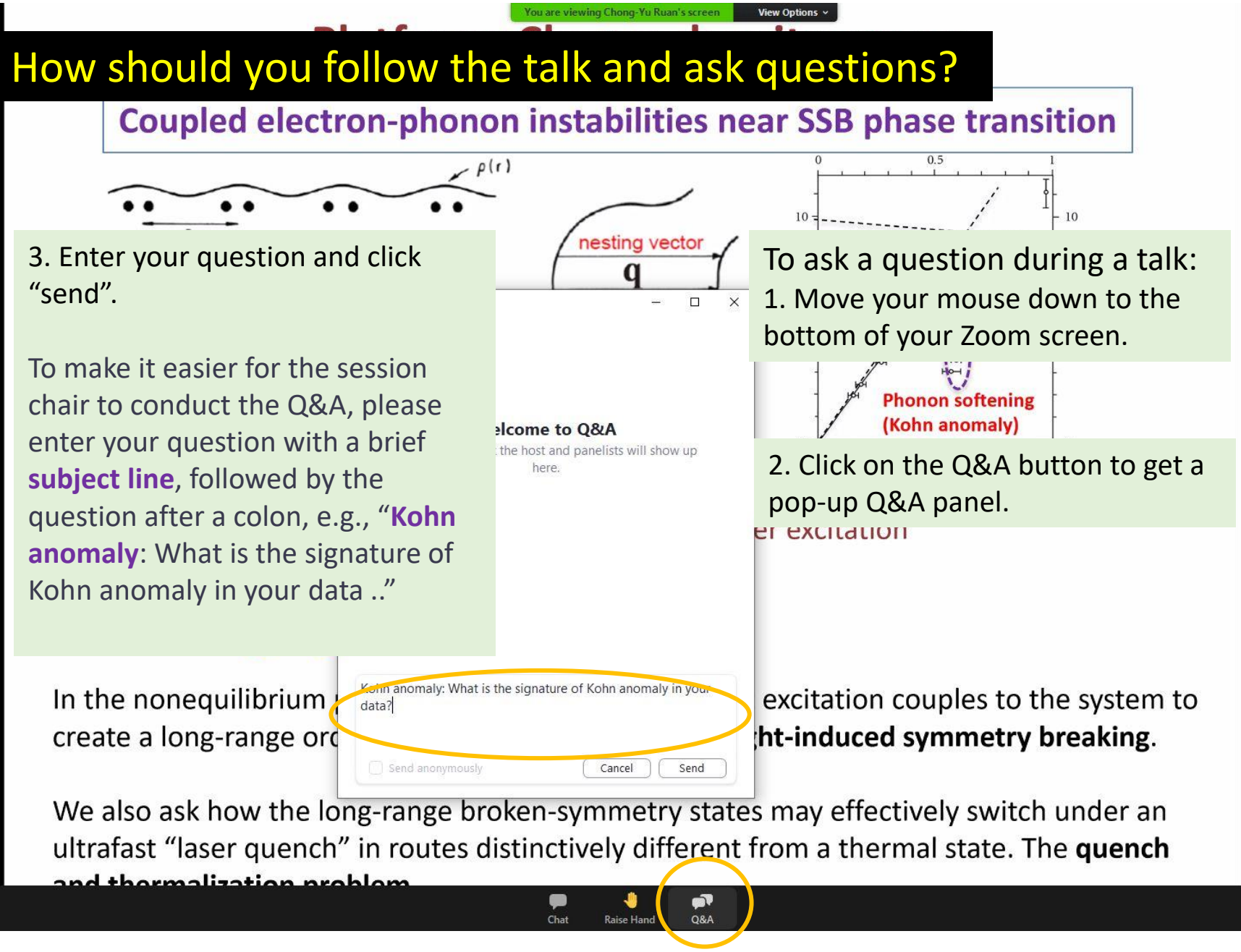
Q & A during the Symposia

The Q&A will be conducted live at the end of each talk.

Because time is limited, the most relevant questions will be chosen at the discretion of the session chair.

If time permits, the session chair might give the attendees the opportunity to ask their questions live.

How should you follow the talk and ask questions?



To ask a question during a talk:

1. Move your mouse down to the bottom of your Zoom screen.

2. Click on the Q&A button to get a pop-up Q&A panel.

3. Enter your question and click "send".

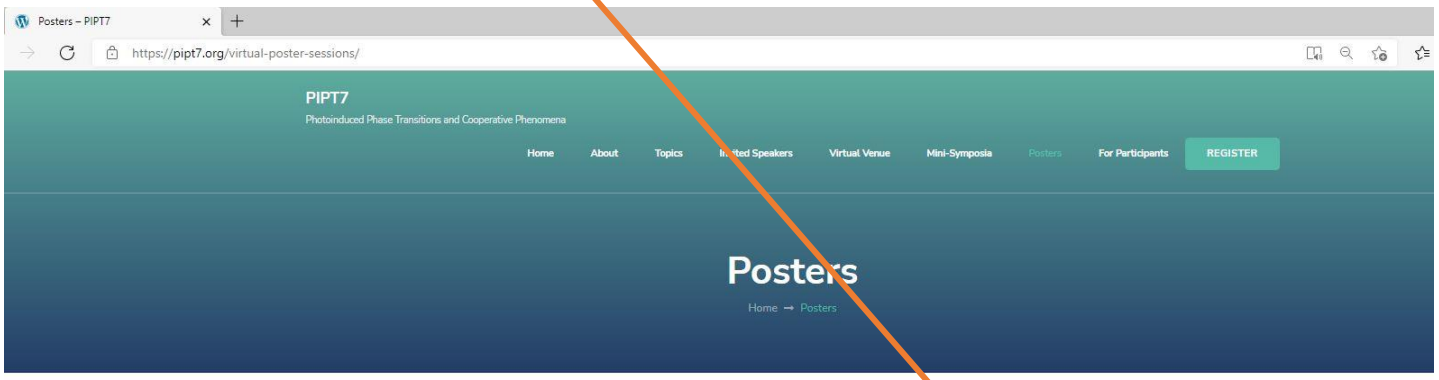
To make it easier for the session chair to conduct the Q&A, please enter your question with a brief **subject line**, followed by the question after a colon, e.g., "**Kohn anomaly**: What is the signature of Kohn anomaly in your data .."

Participant's screen

Poster session is conducted via CVENT

There are two poster sessions; see the PIPT7 webpage (https://pipt7.org/virtual-poster-sessions/).

Registered attendees can access the posters and associated content from the link on the webpage.



PiPT7 virtual poster sessions will be conducted through **Cvent**. There are currently two poster sessions scheduled, on November 10th and on November 16th. The first session will focus on the US and European presentations; the second will focus on the presentations from Asia.

Registered attendees can access the posters and associated content from https://web.cvent.com/hub/events/f3893c33-66b1-4185-ac43-d6618fbd9444/exhibitors.

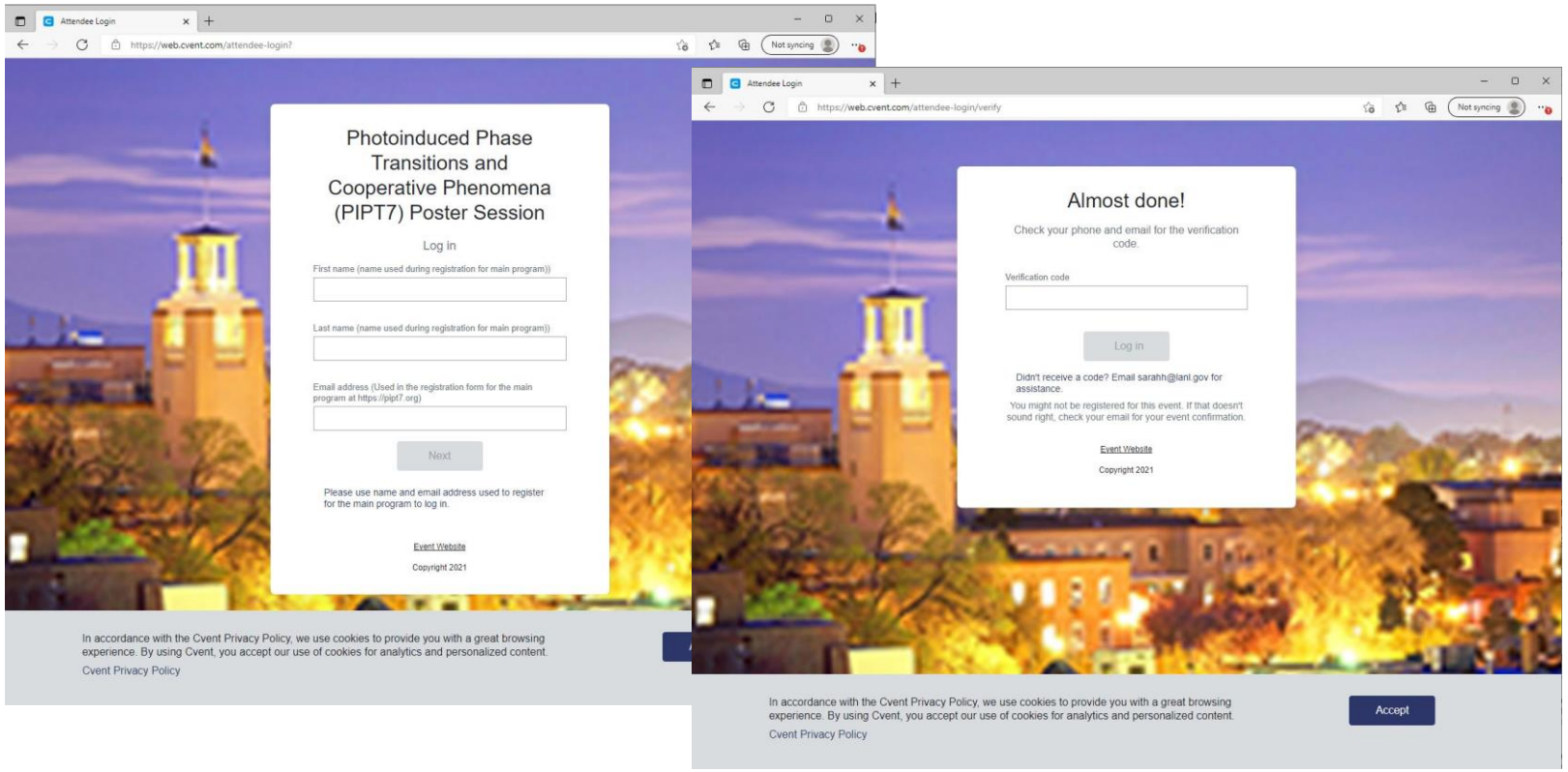
Poster session 1:

November 10 – 12:00pm – 2:00pm MST (Santa Fe time; Central Europe: 8:00pm-10:00pm; Tokyo: 4:00am-6:00am November 11th)

Presenter	Affiliation	Poster title
Benedikt Fauseweh	Los Alamos National Laboratory	Laser pulse driven nonequilibrium dynamics in the Kondo lattice model
Carmen Roelcke	University of Regensburg	Femtosecond atomic forces coherently control a single-molecule switch
Liang Luo	Iowa State University	Light control of topologically protected surface transport and surface-bulk coupling in a

Poster session is conducted via CVENT

To enter, the attendees will need to provide the name and email address that they used in the registration of the main session to enter the poster booths.



The passcode will be sent via e-mail with the subject line: PIPT7 Poster Session Attendee Verification Code. **If you enter your credentials and do not see such an email notification, please check your 'junk mail folder' to be sure.**

Enjoy the meeting!

Co-Sponsors:

We want to thank all the presenters for interesting talks and posters.

We thank all the participants for making this event lively and hoping to see you all in future events.

We like to acknowledge our international scientific committee (ISC):

Andrea Cavalleri (University of Hamburg, Germany / Oxford University,Great Britain), **Eric Collet** (Université de Rennes 1, France), **Jure Demšar** (Johannes Gutenberg-University Mainz, Germany)**, Antoine Georges** (Ècole Polytechnique, France)**, Sumio Ishihara** (Tohoku University, Japan)**, Shinichiro Iwai** (Tohoku University, Japan)**, Shin-ya Koshihara** (Tokyo Institute of Technology, Japan)**, Tadeusz Luty** (Wroclaw University of Technology, Poland)**, Dragan Mihailović** (Jožef Stefan Institute, Slovenia)**, Keiichiro Nasu** (KEK, Tsukuba, Japan)**, Keith A. Nelson** (Massachusetts Institute of Technology, USA)**, Hiroshi Okamoto** (University of Tokyo, Japan), **Theo Rasing** (Radboud University, The Netherlands), **Antoinette Taylor** (Los Alamos National Laboratory, USA)**, Kenji Yonemitsu** (Chuo University, Japan)**, Jianxin Zhu** (Los Alamos National Laboratory, USA)

Their strong support and advice is what makes this event a pleasant home for PIPTists and now PIPT Conference is a running series between Japan, US, and Europe – yes, PIPT8 is coming ….

On the MSU side, we acknowledge the support of the VP office of research, and the support of the MSU CORE with seed grant. We also acknowledge the funding agencies: DOD, DOE, and NSF,

and the support of MSU staff, including

the web design by **Furcean John** and the IT technical support of **Jesse Earley.**

Conference Secretariat staff consists of
Jessica Cords, Xiaoyi Sun, Shuaishuai Sun

We also acknowledge the help from the CINT/LANL.

Special thanks go to Sarah Haag for organizing the poster sessions.

Now is the time to say Good Bye .. But before we do

It is our great pleasure to announce PIPT8 in 2024!

PIPT8 will be hosted by Theo Raising, Alexey Kimel and colleagues !