

Program Committee Meeting Minutes

American Nuclear Society – Thermal Hydraulics Division
Program Committee Meeting
Hilton Orlando Bonnet Creek, Orlando, FL
2:30 – 4:30 PM, Sunday November 11, 2018

Attendees:

Lane Carasik (PC Member), Huajian Chang (PC Member), Fan-Bill Cheung (PC Member), Seungjin Kim (PC Member), Donna Guillen (PC Member), Su Jong Yoon, Annalisa Manera (PC Member), Sama Bilbao y Leon (PC Member), Matt Zimmer (Member), Jinyong Feng (PC Member), Shanbin Shi, Yang Liu (PC Member), Brian Woods (PC Member), Bao-Wen Yang (PC Member), Hisahi Ninokata (PC Member), Maria Avramova (PC Member), Faith Beck, Yue Jin, Xu Cheng (PC Member), Ling Zou (PC Member), Philippe Planquart, Robert Martin (PC Member), Xiaodong Sun (PC Member), Dillon Shaver (PC Member), Jong Kim (PC Member), Raluca Scarlat, Katrien VanTrchell, Ferry Roelofs, Hitesh Bindra, Prashant Jain, Mark Kimber, Dave Pointer (PC Member), Chul-Hwa Song, Igor Bolotonov (Vice Chair), Si Young Lee (PC Member), Yong Hoon Jeong (PC Member), Jun Liao, Mustafa Alper Yildiz, Guacomo Busco, John Mulloy, Aaron Krueger, Yassin Hassan (PC Member), Steven Arndt (PC Member), Jun Wang, Piyush Sabharwall (PC Member), Qinglong Wen, Jun Yang, Marilyn Delgado, John Luxat (PC Member), Elia Merzari (Chair), Wade Marcum (Secretary)

A scanned copy of the list of attendees is provided in Appendix A.

1. **Opening** (Merzari)

Meeting called to order at 2:32 pm by Elia Merzari (THD PC Chair)

2. **Approval of Meeting Agenda** (All)

MOTION: to approve agenda (Dave Pointer)
SECOND: (Sama Bilbao y Leon)
VOTE: No opposed
MOTION APPROVED

A scanned copy of the meeting agenda is provided in Appendix B.

Informal introductions of all those present at the PC were made following approval of meeting agenda.

3. **Approval of Minutes from 2018 Annual Meeting** (All)

MOTION: to approve the minutes (Dave Pointer)
SECOND: (Sama Bilbao y Leon)
VOTE: No opposed
MOTION APPROVED

4. Update on THD Sessions from the ANS 2018 Winter Meeting & ATH Meeting (Merzari/Bolotnov)

Elia Merzari reported on the THD sessions. No 2018 ANS Winter Meeting sessions are noted in the Program. Dr. Merzari Provided a summary of the Advanced in Thermal Hydraulics Meeting with a few notings: This is the fourth time ATH has been held and there were 130 papers accepted across 32 sessions. The statistics (found in APPENDIX C) are from the printed reference of the program. However, some cancelations have been made since the official program was printed.

Dr. Merzari noted the importance of referencing the digital (online version of the program) as it is kept up to date while the print version is frozen on the date of print.

Dr. Merzari acknowledged that this ATH meeting is the first time that Keynote speakers will participate. There are three key-notes at the 2018 ATH Meeting. A panel session has also been added which marks the first panel at an ATH meeting.

Dr. Merzari noted that approximately 40 percent of the papers for ATH were found to be submitted by international participants.

To highlight the TAA there has been a special session allocated to the awardee to present at the 2018 ATH meeting.

Gratitude by the entire PC and all meeting attendees was extended to Dr. Merzari for his diligent and tireless efforts for the successful Meeting.

5. Update on THD Program for the Upcoming 2019 Annual Meeting in Minneapolis MN (Merzari)

Refer to APPENDIX C for the detail of the sessions and session organizers for the 2019 Annual Meeting in Minneapolis MN.

Dr. Merzari acknowledged the importance of session organizers to solicit reviewers, drumming papers to successfully execute the track and complete reviews for the session topics and papers. If you are an organizer it is important that everyone fulfill these roles.

6. Planning for Future 2019 Winter Meeting in Washington DC (Merzari/Bolotnov)

Dr. Merzari solicited suggestions for session topics associated with the upcoming 2019 Winter Meeting in Washington DC. The outcome of conversation resulted in the following proposed sessions and session organizers:

- Panel: Thermal Hydraulic challenges on Micro-reactors (Annalisa Manera / Donna Guillen)
- Thermal Hydraulics on HEU to LEU conversion of research reactors (Prashant Jain / Hitesh Bindra)
- Panel: Education Nuclear Thermal Hydraulics Issues and Challenges (Lane Carasik / Elia Merzari)
- Flow Visualization in single and two-phase flows: Recent Progress (Wade Marcum / Marilyn Delgado)
- Computational Thermal Hydraulics (Maria Avramova / Matthew Zimmer)
- Two Phase Thermal hydraulics (Dillon Shaver / Yang Liu)
- General Thermal hydraulics (Junsoo Yoo / Jiyong Feng)
- Experimental Thermal Hydraulics (Mark Kimber / Shanbin Shi)
- Multiscale and Multi-physics Thermal Hydraulics (Dave Pointer / Ferry Roelofs)

- Young Professional thermal-hydraulics Research Competition (Dillon Shaver/Ling Zou)

The 2019 ANS Winter Meeting located in Washington DC will take place from November 17-21, 2019.

MOTION: to approve the sessions as proposed (Dave Pointer)

SECOND: (Piyush Sabharwall)

VOTE: No opposed

MOTION APPROVED

7. NUTHOS-12 Recap (Sun)

Dr. Xiaodong Sun provided a summary of the NUTHOS-12 Meeting. A few of these highlights noted during the summary included:

- 520 abstracts: 304 papers were submitted: 275 full papers final submission (288 oral presentations). Approximately 20 no-shows. 10 best papers and 10 best reviewers were selected
- 2 technical tours were provided during the conference (AP1000 and CAP1400 sites).

It was also noted that there was a relatively large difference between the total number of abstracts and the total number of final papers.

A scanned copy of the NUTHOS-12 Meeting Summary is provided in Appendix D

8. NURETH-18 Update (Woods/Marcum)

Prof. Brian Woods provided an update on the NURETH-18 Meeting status:

- All main technical tracks have been organized and established.
- Abstract deadline is Monday November 19th, 2018. Total submitted abstracts include 34 total as of November 11, 2018.
- Email distributed to the community to drum papers up.
- Have identified and received commitments on special topics, but there is room for more.
- Tuesday evening an organizers session will take place in Palm-beach room.

It was noted that there was little dissemination of information to Europe on the call and suggested to send out an email with call for papers to the entire Thermal Hydraulics roster. Dr. Dave Pointer noted that there has been an issue with the email distribution getting to any email addresses which contain “.gov”. A suggestion was made to broaden the distribution of call for papers to all authors from the NUTHOS topical meetings as well.

9. NUTHOS-13 Update (Luxat)

Prof. John Luxat provided an update regarding the NUTHOS-13 Meeting status:

- A few delays were observed, but there is now an official date of August 21-27, 2020 in Vancouver.
- Hotel has been selected in downtown Vancouver.
- A professional conference organizing committee has been identified and is being worked with to take lead on this conference as well.

- Progress is now moving along and making progress logistically.
- Budget was based on NUTHOS-12 with attendance of slightly greater than 300; the hotel and venue can accommodate up to 400 people.

It was noted that this is the first NUTHOS that is hosted in North America.

10. **ATH'20 Update** (Merzari)

Dr. Merzari Noted that both ICONE, and NUTHOS will be in North American in the same year along with ATH in 2020. It was therefore proposed that ATH 2020 be hosted in Europe rather than in the US. A proposal by EDF in France was made to host ATH in 2020 (refer to APPENDIX C for the proposal).

The proposed dates included April 27-30, 2020 or May 25-28, 2020.

It was noted that this by moving to Europe it would move the ATH Meeting from an embedded topical to a stand-alone topical meeting.

MOTION: to approve the proposal for ATH20 to be hosted in Europe (Lane Carasik)
 SECOND: Second (Xiaodong Sun)
 VOTE: YAY (17), NAY (2), Abstain (15)
 MOTION APPROVED

11. **NURETH-19 Update** (Merzari)

Dr. Merzari asked to put on record that no action has presently been taken by the THD Executive Committee to seek proposals for NURETH-19 and that the EC must take action to seek proposals for NURTH-19 soon in order to ensure that all deadlines are met.

It was brought up that the National Program Committee is now putting a capacity limit on the topical meetings held in the US. Therefore it is important for future topical meetings hosted by THD to be aggressive in identifying a host for future NURETHs to ensure that our topical meetings are held and not removed from the offerings as an ANS topical meeting.

Representatives from Belgium acknowledged that they are interested in hosting NURTH-19 should a proposal solicitation become available (refer to APPENDIX E for further information on this discussion).

12. **Special Issues Journals updates** (Merzari)

a. NURETH-17 (Yang)

Prof. Bao-Wen Yang stated that NURETH-17 special issues are in the following state:

- Nuclear Science & Engineering (14 papers) is almost complete
- Nuclear Technology (29 papers) is almost complete
- Nuclear Engineering & Design (~60 papers) is still ongoing through the review process.

b. ATH'18 (Merzari)

Dr. Merzari acknowledged that a special issue going to be published in Nuclear Technology. Additionally, he requested that session chairs provide feedback on the quality of the

presentations as this in-combination with the paper-review scores will decide which papers make it into the special issue.

13. **Old Business** (All)

None.

14. **New Business** (All)

None.

15. **Adjourn** (Merzari)

MOTION: to adjourn (Dillon Shaver)

SECOND: (Piyush Sabharwall)

VOTE: No opposed

MOTION APPROVED

Meeting adjourn at 4:04 pm.

APPENDIX A
Program Committee Meeting List of Attendees

LIST OF ATTENDEES

American Nuclear Society – Thermal Hydraulics Division
Program Committee Meeting
Hilton Orlando Bonnet Creek, Orlando, FL
2:30 – 4:30 PM, Sunday November 11, 2018

Lane, Carasik @ gmail.com
~~Carasik@us~~

Name	Organization	Email
HUAIJIAN CHANG	state Nuclear Power Corporation Research Institute, China.	changhj@tsinghua.edu.cn
F. Bill Cheung	Penn State	fxcf@psu.edu
SEUNGJIN KIM	PURDUE UNIV.	seungjin@purdue.edu
Donna Guillen	INL	Donna.Guillen@inl.gov
Su Jong Yoon	INL	sujong.yoon@inl.gov
Annalisa Manera	Univ. of Michigan	manera@umich.edu
SAMA BILBAO Y LEON	OECD NEA / VCU	SAMA.BILBAOYLEON@OECD-NEA.ORG
Matt Zimmer	NCSU	mdzimmer@ncsu.edu
Jinyong Feng	MIT	jinyongf@mit.edu
Shanhu SW	RPI	shis3@rpi.edu
Yang Liu	Virginia Tech	liu130@vt.edu
Brian Woods	Oregon State University	brian.woods@oregonstate.edu
BAO-WEN YANG	XJTU	bw1@carpassociates.com
Hisashi Ninokata	POLIMI	hisashi.ninokata@polimi.it
MARIA AVRAMOVA	NCSU	mnavramo@ncsu.edu
Fatih BEK	PSU	fatih.f.beck@gmail.com
Yue Jin	Penn State	yuj118@psu.edu
Xu Cheng	UKIT	xu.cheng@ukit.edu
Ling Zou	INL	ling.zou@inl.gov
Philippe PLANQUART	VKI	philippe.planquart@vki.acte
Robert P Martin	BWXT	rpmartin@bwxt.com
Xiaodong Sun	UMich	xdsun@umich.edu
Dillon Shaver	ANL	dshaver@anl.gov
Jong Kim	KAIST	kimj@kaist.ac.kr

LIST OF ATTENDEES

American Nuclear Society – Thermal Hydraulics Division
 Program Committee Meeting
 Hilton Orlando Bonnet Creek, Orlando, FL
 2:30 – 4:30 PM, Sunday November 11, 2018

Name	Organization	Email
Raluca Searlat	UW Madison	rosearlat@wisc.edu
Katzen Van Trichellen	SKK-CEN	katichel@skcen.be
Ferry Ruelfs	NRG	roelofs@nrg.eu
Hitesh Bindra	K-State (KSU)	hbindra@ksu.edu
Prashant Jain	ORNL	jainpk@ornl.gov
Mark Kimber	Texas A&M Univ.	mark.kimber@tamu.edu
DAVE POINTER	ORNL	pointerd@ornl.gov
Chul-Hwa SONG	KAERI, Korea	chsong@kaeri.re.kr
Igor Bolotnov	NCSU	iabolotn@ncsu.edu
Si Young Lee	SRNL	si.lee@srnl.doe.gov
Yong Hoon Jeong	KAIST	jeongyh@kaist.ac.kr
Jun Liao	Westinghouse	LIAOJ@westinghouse.com
Mustafa Alper Yildiz	Texas A&M Univ	may@tamu.edu
GIACOMO BUSCO	TEXAS A&M	giacombusco@tamu.edu
John Mulloy	Texas A&M University	jmMulloy1@tamu.edu
Aaron Krueger	Texas A&M	akrueger93@tamu.edu
Yassin Hassan	Texas A&M University	y-hassan@tamu.edu
STEVEN ARNDT	US NRC	stevan.arndt@nrc.gov
Jun Wang	UW Madison	junwang64@wisc.edu
Piyush Sabharwal	Idaho National Lab	Piyush.Sabharwal@inl.gov
Qinglong, WEN	Chongqing Univ.	qlwen@cqu.edu.cn
Jun Yang	Huazhong Univ. Sci & Tech	yangjun@hust.edu.cn
Marilyn Delgado	TAMU	mdelgad17@tamu.edu
JOHN LUXAT	McMASTER U	luxatj@mcmaster.ca

ELIA PERZARI, ARCONNE NAT. LAB., *eli*
Wade Marcum Oregon State Univ., *Wade*

APPENDIX B
Draft PC Meeting Agenda (Proposed)

PROPOSED AGENDA

American Nuclear Society – Thermal Hydraulics Division
Program Committee Meeting
Hilton Orlando Bonnet Creek, Orlando, FL
2:30 – 4:30 PM, Sunday November 11, 2018

1. **Opening** (Merzari)
2. **Approval of Meeting Agenda** (All)
3. **Approval of Minutes from 2018 Annual Meeting** (All)
4. **Update on THD Sessions from the ANS 2018 Winter Meeting & ATH Meeting** (Merzari/Bolotnov)
5. **Update on THD Program for the Upcoming 2019 Annual Meeting in Minneapolis MN** (Merzari)
6. **Planning for Future 2019 Winter Meeting in Washington DC** (Merzari/Bolotnov)
7. **NUTHOS-12 Recap** (Sun)
8. **NURETH-18 Update** (Woods/Marcum)
9. **NUTHOS-13 Update** (Luxat)
10. **ATH'20 Update** (Merzari)
11. **NURETH-19 Update** (Merzari)
12. **Special Issues Journals updates** (Merzari)
 - a. **NURETH-17** (Yang)
 - b. **ATH'18** (Merzari)
13. **Old Business** (All)
14. **New Business** (All)
15. **Adjourn** (Merzari)

(1)

Advances in Thermal-Hydraulics (ATH) 2018

E. Merzari, S. Benhamadouche and S. Bilbao-y-Leon

Highlights

No sessions have been organized by THD at the ANS Winter Meeting 2018 due to the presence of embedded topical meeting Advances in Thermal-hydraulics ATH'18. In order to stimulate participation in ATH'18 it was decided to avoid organizing regular sessions in parallel.

ATH is a young series of meetings that features the very latest innovations in nuclear thermal-hydraulics. The theme of this year conference is, "**Innovation in Thermal-Hydraulics: The Key to the Future of Nuclear**". The conference will include a vibrant plenary session Monday afternoon with a lecture from Ed Blandford from Kairos Power and contributions from the ANS president John Kelly, Kathryn McCharty, Jean Paul Chabard and Youssef Ballout. Three conference keynotes that span the breadth of the art and science of reactor thermal-hydraulics are also scheduled; from Katrien Van Tichelen, Igor Bolotnov and Itzok Tiselj. This is the first time that conference keynotes are part of ATH. In another first for ATH, we have organized a panel on one of the hottest topics in thermal-hydraulics: "Thermal Hydraulics Applications of Machine Learning and Data Science". Moreover, a **TAA lecture** by Dr. Lee will be delivered on Wednesday morning at 8:30 am.

Participation in ATH'18 promises to be record breaking. Over 140 summaries and full papers have been submitted to the meeting. The meeting as of November 1st has 130 presentations scheduled in 32 sessions (note that this number will inevitably change due to last-minute cancellations). Of these 101 presentations are associated to a full paper. On Wednesday afternoon, we will hold the annual young professional thermal-hydraulic research competition. Eleven (11) summaries are currently in competition.

Submission and Review statistics

Reconciled review recommendations for the summaries are as follows:

	4	Accept (A)
	109	Accept with Revision (A/R)
	27	Reject Unless Revised (R/R)
	5	Reject (R)
Total	145	

All reviews received the necessary reviews (2 for A or A/R and 3 for R or R/R). A second round of review was conducted for R/R papers. A total of 130 papers were included in the program as of November 1st. We thank in particular Dr. I. Bolotnov and X. Sun for their

support in the second round of reviews. As this is not a regular ANS meeting and full papers were included we do report individual reviewer statistics.

Sessions Statistics

There are 32 planned sessions at ATH. This includes a panel session, Three keynotes and a plenary.

Monday (Nov. 12) 1:30 pm – 6:00 pm
ATH Plenary [1:30 pm]

Tuesday November 12

Keynote – I [8:30 am]
Computational Thermal Hydraulics – I [10:15 am]
Two-Phase Flow and Heat Transfer Fundamentals—I [10:15 am]
Lead and LBE Cooled Reactor Thermal Hydraulics [10:15 am]
Operating LWRs Thermal Hydraulics and Safety [1:30 pm]
Next Generation LWR Thermal Hydraulics [1:30 pm]
Molten-Salt Reactor Thermal Hydraulics [1:30 pm]
Thermal Hydraulics in Accident Management [3:55 pm]
Boiling and Condensation Phenomena [3:55 pm]
Simulation and Experiments of Wire-Wrapped Fuel Assemblies [3:55 pm]

Wednesday November 13

Keynote – II [8:30 am]
Technical Achievement Award Lecture [8:30 am]
Thermal Hydraulics of Waste Management, Test Reactors and Advanced Fuels [10:15 am]
Thermal Hydraulics Applications of Machine Learning and Data Science—Panel [10:15 am]
High Performance Computing Applications in Nuclear Engineering [10:15 am]
Advanced Reactor Thermal Hydraulics—I [10:15 am]
Rod Bundle Thermal Hydraulic [1:30 pm]
Young Professional Thermal Hydraulic Research Competition—I [1:30 pm]
General Thermal Hydraulics—I [1:30 pm]
Advanced Reactor Thermal Hydraulics—II [1:30 pm]
Experimental Methods and Instrumentation [3:55 pm]
Young Professional Thermal Hydraulic Research Competition—II [3:55 pm]
General Thermal Hydraulics—II [3:55 pm]
Advanced Code Development with Verification and Validation [3:55 pm]

Thursday November 14

Keynote – III [8:30 am]
Computational Fluid Dynamics-II [10:25 am]
Two-Phase Flow and Heat Transfer Fundamentals—II [10:25 am]
General Thermal Hydraulics—III [10:25 am]
Computational Thermal Hydraulics—II [2:00 pm]
Neutronics/Thermal Hydraulics Coupling [2:00 pm]
General Thermal Hydraulics—IV [2:00 pm]

We list below session chairs and individual statistics for each regular session (excluding Keynotes, TAA lecture and Plenary).

Session	# of papers	Time Slot	Location	Chairs
Computational Thermal Hydraulics—I	4	Tue. 10:15 am	Escambia	H. Ninokata, P. Jain
Two-Phase Flow and Heat Transfer Fundamentals—I	5	Tue. 10:15 am	Nassau	F. B. Cheung, S. Kim
Lead and LBE Cooled Reactor Thermal Hydraulics	4	Tue. 10:15 am	Manatee	J. Liao, K. Van Tichelen
Operating LWRs Thermal Hydraulics and Safety	5	Tue. 1:30 pm	Escambia	B. W. Yang, Y. Lee
Next Generation LWR Thermal Hydraulics	5	Tue. 1:30 pm	Nassau	X. Cheng, V. Petrov
Molten-Salt Reactor Thermal Hydraulics	5	Tue. 1:30 pm	Manatee	X. Sun, N. Brown
Thermal Hydraulics in Accident Management	5	Tue. 3:55 pm	Escambia	J. Luxat, S. Bilbao-y-Leon
Boiling and Condensation Phenomena	6	Tue. 3:55 pm	Nassau	I. Bolotnov, Y. Liu
Simulation and Experiments of Wire-Wrapped Fuel Assemblies	6	Tue. 3:55 pm	Manatee	F. Roelofs, Y. Hassan
Thermal Hydraulics of Waste Management, Test Reactors and Advanced Fuels	5	Wed. 10:15 am	Escambia	S. Y. Lee, A. Tentner
Thermal Hydraulics Applications of Machine Learning and Data Science—Panel	-	Wed. 10:15 am	Nassau	S. Bilabo-y-Leon, E. Merzari

High Performance Computing Applications in Nuclear Engineering	7	Wed. 10:15 am	Manatee	S. Benahmadouche, I. Tiselj
Advanced Reactor Thermal Hydraulics—I	5	Wed. 10:15 am	Orange	H. Bindra, P. Planquart
Rod Bundle Thermal Hydraulics	5	Wed. 1:30 pm	Escambia	T. Howard, M. Avramova
Young Professional Thermal Hydraulic Research Competition—I	5	Wed. 1:30 pm	Nassau	D. Shaver, L. Zou
General Thermal Hydraulics—I	5	Wed. 1:30 pm	Manatee	W. D. Pointer, T. Marshall
Advanced Reactor Thermal Hydraulics—II	5	Wed. 1:30 pm	Orange	A. Shams, I. Gutowska
Experimental Methods and Instrumentation	6	Wed. 3:55 pm	Escambia	A. Manera, M. Delgado
Young Professional Thermal Hydraulic Research Competition—II	6	Wed. 3:55 pm	Nassau	L. Zou, D. Shaver
General Thermal Hydraulics—II	4	Wed. 3:55 pm	Manatee	D. Guillen, J. Wang
Advanced Code Development with Verification and Validation	5	Wed. 3:55 pm	Orange	Y. Liu, H. Jo
Computational Fluid Dynamics	4	Thu. 10:25 am	Escambia	L. Carasik, A. Shams
Two-Phase Flow and Heat Transfer Fundamentals—II	4	Thu. 10:25 am	Nassau	J. Feng, J. Yoo
General Thermal Hydraulics—III	4	Thu. 10:25 am	Manatee	J. Pacio, G. Busco

Computational Thermal Hydraulics—II	4	Thu. 2:00 pm	Escambia	S. Benchmadouche, S. Usman
Neutronics/Thermal Hydraulics Coupling	4	Thu. 2:00 pm	Nassau	R. Salko. K. Segard
General Thermal Hydraulics—IV	4	Thu. 2:00 pm	Manatee	E. Merzari
Total	127			

Additional Notes:

- All paper presentations are 25 minutes each.
- **The total paper count increases to 130 including the keynotes**
- Paper numbers do not include last minute cancellations. Refer to online program for latest paper counts

Session chair instructions

Session chairs are invited to follow instructions below:

Before the session:

- If possible, review the papers in your session ahead of time by checking the proceedings. Make sure to prepare questions beforehand for each paper, to facilitate the discussion.
- Just before the session, visit the check-in desk and verify which authors have checked-in at the desk. This will alert you of possible no-shows.

At the session:

- **Check the latest version of the program (online or on the ANS app). The schedule might have changed due to cancellations.**
- Show up at the room 25 minutes before the beginning of the session. This is very important given how tight the conference schedule is. Authors will be required to arrive 20 minutes before the beginning of the sessions.
- Work with the student supporting your session.
- Collect bios from the authors
- Make sure all presenters have tested their presentation before the session starts.
- Each presentation is 20 minutes in length with additional five minute of questions (for a total of 25 minutes). Notify authors 5 minutes, 2 minutes and at the end of the presentation.
- Allow five minutes of questions.
- Respect the schedule of the meeting. If a no-show occurs wait until the time arrives for the next presentation. If necessary take a break. In general do not rearrange papers in the session without informing the conference organizers (by e-mail emerzari@anl.gov).

After the session:

- Make sure to complete all ANS-request forms.
- Complete the ATH'18 session chair form attached and send to (emerzari@anl.gov) once you are done. Papers that you recommend may be selected for the ATH'18 special issue. You can send the form as a scanned copy, a picture or in word/pdf format.

ANS 2019 Annual Meeting, Minneapolis, MN

E. Merzari and I. Bolotnov

The ANS Annual Meeting 2019, will be held in Minneapolis, MN at Hyatt Regency Minneapolis between June 9-13, 2019. THD is again offering a vibrant program with twelve sessions (including one panel).

The sessions are:

- 19a. Severe Accident Thermal Hydraulics (Luxat/ Mignot)
- 19b. Large Eddy Simulation (LES) and Direct Numerical Simulation (DNS) (Zimmer/Carasik)
- 19c. Scaling Methodologies for SET and IET (P) (Frepoli/Carasik)
- 19d. Thermal Hydraulics of Accident-Tolerant Fuels (Wang/Yeom)
- 19e. Experiments on Two-Phase Flow and Heat Transfer Fundamentals (Kim/Cheung)
- 19f. Multiphase Computational Fluid Dynamics (Guillen/Shaver)
- 19g. Data-Driven Modeling (Zou/Merzari)
- 19h. Thermal Hydraulics and Mass Transport in FHRs and MSR (Sun/Ninokata)
- 19i. Advances in Instrumentation for TH Experiments (Pointer/Marcum)
- 19j. Computational Thermal Hydraulics (Bolotnov/Muftuoglu)
- 19k. Experimental Thermal Hydraulics (Woods/Brooks)
- 19l. General Thermal Hydraulics (Arndt/Yang)

The submission website is open at:

<http://epsr.ans.org/meeting/?m=263>,

The submission window has already open and it will close in January 2019. We encourage all PC members to solicit papers to ensure this meeting is a success.

ATH 2020

E. Merzari and I. Bolotnov

2020 will be a busy year for THD. ICAPP will be in the US and NUTHOS will be in Canada. Moreover NURETH will just have wrapped up in Portland. It would be challenging to host ATH in the US in these conditions.

Thankfully we have received a strong expression of interest to host ATH in France (Saclay) by EdF. Both SFEN and ANS-France are also supporting this idea. The attraction is the limited size of the meeting, as opposed to NURETH which will be increasingly hard to organize in Europe.

I think it's worth exploring this opportunity which will raise the profile of ATH in Europe while limiting competition to events in the US. The alternative could be to not have ATH in 2020, which would erase recent momentum.

Proposed conference structure

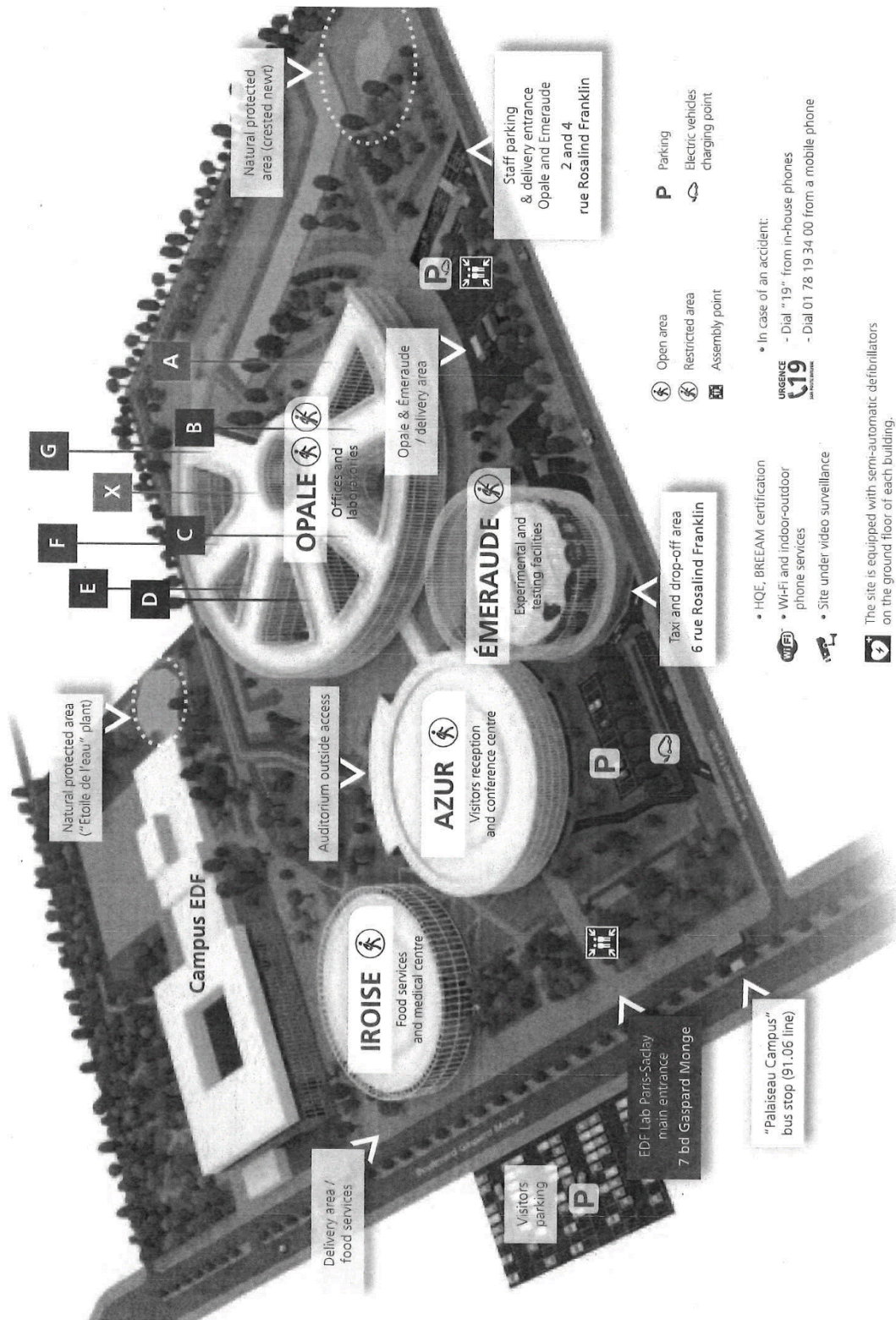
Honorary Chair: Yassan Hassan
General Chairs: Seungjin Kim and Jean Paul Chabard
Program Chairs: Sofiane Benhamadouche and Igor Bolotnov
Potential Dates: 04/27-04/30 or 5/11-5/14 or 5/25-5/28
Organizations: EdF, SFANS, SFEN
Venue: Saclay (see attached)



EDF lab

PARIS-SACLAY
RESEARCH CENTRE

WELCOME



OPALE

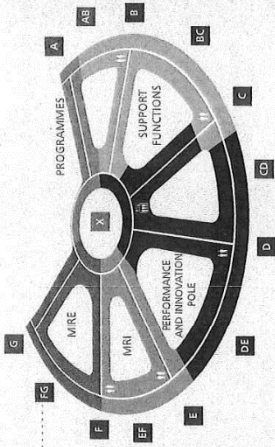
Accessible from the Azur building through a covered gallery, Opale opens into a vast Atrium (open area) and its cafeteria.

This building houses the laboratories and the exhibition hall (ground floor) but also the offices on its 1st, 2nd and 3rd floors (restricted area).

The underground of the Opale building houses two parking levels for the staff.

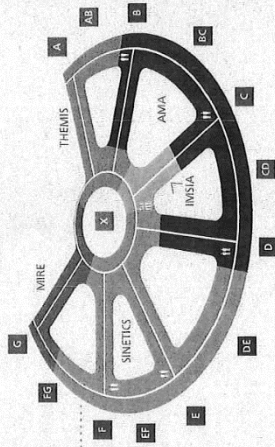
3RD FLOOR

- A PROGRAMMES
- BC MANAGEMENT TEAMS
- AB B BC SUPPORT FUNCTIONS
- C CD D DE PERFORMANCE AND INNOVATION POLE
- E EF F MRI
- F FG G MIRE



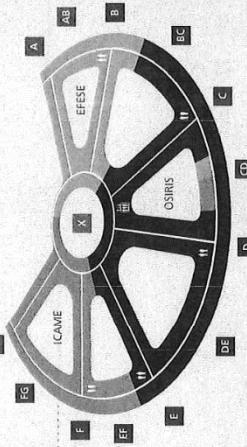
2ND FLOOR

- A AB THEMIS
- C IMSIA
- B BC C CD D AMA
- DE E EF F FG SINETICS
- FG G MIRE



1ST FLOOR

- A AB B BC EFESE
- BC C CD D DE E OSIRIS
- EF F FG G ICAME

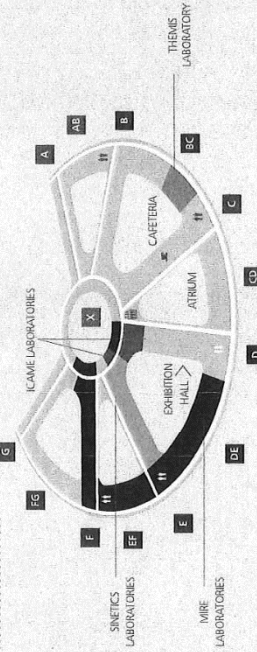


UNDERGROUND -1 level

- EDF VEHICLES PARKING
- ELECTRIC VEHICLES CHARGING POINTS
- STAFF PARKING

GROUND FLOOR

- BC THEMIS LABORATORY
- C CAFETERIA
- CD ATRIUM
- D EXHIBITION HALL
- D ICAME LABORATORIES
- E SINETICS LABORATORIES
- DE EF F MIRE LABORATORIES



UNDERGROUND -2 level

- STAFF PARKING

AZUR

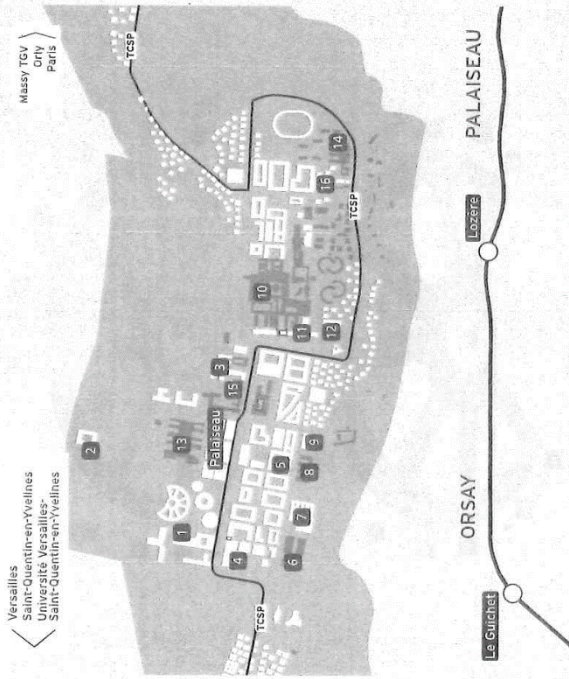
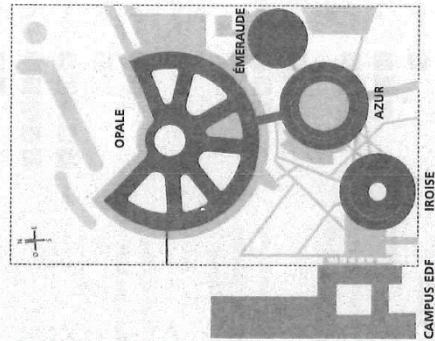
In addition to being a visitor reception building, Azur is also a conference centre, hosting on its ground floor an auditorium, two amphitheatres, a vast reception area, a business centre and the concierge services. On its first floor, the Azur building houses meeting and training rooms.

IROISE

Also located in the open area, this building is dedicated to food services (company canteen and brewery).

ÉMERAUDE

Located in the access restricted area, the Émeraude building houses the experimental and testing facilities. It also houses laboratories, offices, archives and technical rooms.



- 1 EDF Lab Paris-Saclay
- 2 Poste source ERDF (2017)
- 3 Digitélab
- 4 AgroParisTech INRA
- 5 Institut Mines-Télécom (2019)
- 6 Nano - INNOV System X
- 7 Centre de Nanosciences et Nanotechnologies (2017)
- 8 Horiba Jobin-Yvon

- 9 Institut Photovoltaïque d'Île-de-France (2017)
- 10 Ecole Polytechnique
- 11 Bâtiment d'enseignements mutualisés (2018)
- 12 ENSTA ParisTech (2016)
- 13 Danone Research
- 14 ENSTA ParisTech
- 15 Thales
- 16 Pôle de mécanique (2019)

ACCESS EDF LAB PARIS-SACLAY:

Open from 7 AM to 8 PM (from Monday to Friday)

GPS: 48.717686, 2.198853

- Pedestrian access: 7 Boulevard Gaspard Monge, Palaiseau
- Access to the staff parking and the delivery area: 2 and respectively 4 rue Rosalind Franklin in Palaiseau
- Visitors parking: in front of the main entrance, 7 Boulevard Gaspard Monge in Palaiseau

ACCESS BY PUBLIC TRANSPORTATION

From Paris

RER B or C > Massy Palaiseau stop;

Then Bus 91.06 (or 91.10) > Palaiseau-Campus stop

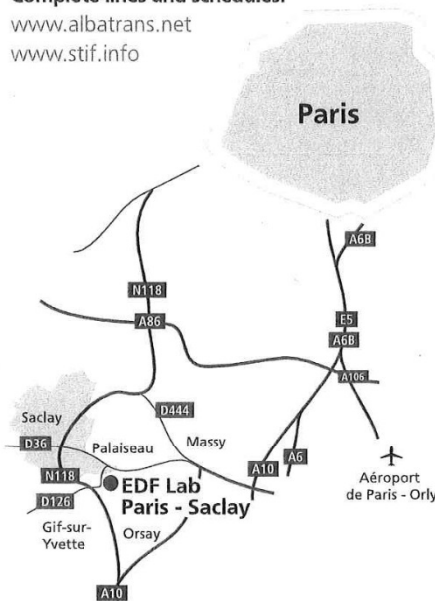
From Vélizy II – Gare routière T6 station

Take the Express 91.08

Complete lines and schedules:

www.albatrans.net

www.stif.info



ACCESS BY CAR

From Paris

→ Take the N118 from Pont de Sèvres.

Take the 9th exit, towards "Orsay-le-Guichet".

→ From Porte d'Orléans:

take the A6 highway towards Lyon.

Continue on the A10 highway towards

"Nantes/Bordeaux".

Take the "D444/Versailles/ Igny/Bièvres" exit

on the left. Continue on the D36.

From Paris airports

→ From Paris-Charles de Gaulle:

take the A1 highway towards Paris.

At Porte de la Chapelle, take the exterior ring road towards Rouen.

At Porte de Saint Cloud, take the N10 towards "Bordeaux/Nantes". Then follow instructions as for the N118 car access.

→ From Paris-Orly:

take the N7 towards Paris. Then follow

the A86 highway towards Versailles.

Take the 30th exit towards « A6/A10/Bièvres/ Igny/Bordeaux/Nantes ».

Continue on the A10 highway towards

« Nantes/Bordeaux ».

Take the "D444/Versailles/ Igny/Bièvres"

exit on the left. Continue on the D36.



EDF Direction Recherche et Développement

EDF Lab Paris-Saclay

7 boulevard Gaspard Monge

91120 Palaiseau

Tél : 01 78 19 32 00



 **NUTHOS-12 (Oct.14-18, 2018, Qingdao, China)**

Organizer, Host, Sponsors

Organizer		CNS	Chinese Nuclear Society
Host		SPICRI	State Power Investment Corporation Research Institute
International Sponsors		IAEA	International Atomic Energy Agency
		ANS	American Nuclear Society
		AESJ	Atomic Energy Society of Japan
		KNS	Korean Nuclear Society
		KTG	German Nuclear Society

 NUTHOS-12 (Oct.14-18, 2018, Qingdao, China)		Country of Institute	Abstract	Full Paper Draft	Final Full Paper
Abstract & Full Paper Received ➤ Abstract: 524 ➤ Final Full Paper: 275 Mainly From: China: 128 (including Taiwan: 3) Korea: 26 Japan: 33 Germany: 31 France: 20 Other Countries: 37 ➤ Oral Presentations: 288		China	300	147	125
		Korea	45	31	26
		Germany	34	31	31
		Japan	36	32	33
		France	29	20	20
		China Taiwan	14	3	3
		USA	14	4	4
		Italy	7	8	7
		Sweden	9	6	6
		Canada	6	4	4
		Switzerland	5	3	3
		Russia	5	3	2
		Spain	4	3	2
		Iran	4	1	0
		Czech Republic	2	2	2
		Luxembourg	2	1	1
		Thailand	1	0	0
		UAE	1	1	1
		Sudan	1	1	1
		UK	2	1	1
Slovenia	1	1	1		
Lithuania	1	1	1		
Belgium	1	1	1		
		TOTAL	524	305	275



 **NUTHOS-12 (Oct.14-18, 2018, Qingdao, China)**

10 Best Papers and 10 Best Reviewers

No.	Name	Country
01	Francisco Acosta	France
02	Guangtao Duan	Japan
03	Wentao Guo	Switzerland
04	Algirdas Kaliatka	Lithuania
05	Mooneon Lee	Korea
06	Lovasz Liviusz	Germany
07	Koji Morita	Japan
08	Corbinian Nigbur	Germany
09	Shanbin Shi	USA
10	Junying Xu	China

Best Papers

No.	Name	Country
01	Prof. Antonio Cammi	Italy
02	Prof. Shun-Chi Wu	Taiwan, China
03	Prof. Puzhen Gao	China
04	Dr. Bruno Gonfiotti	Italy
05	Prof. Joosuk Lee	Korea
06	Dr. Zhao Meng	Germany
07	Prof. Koji Morita	Japan
08	Mr. Moritz Schenk	Germany
09	Prof. Wenxi Tian	China
10	Prof. Jinbiao Xiong	China

Best Reviewers

 **NUTHOS-12 (Oct.14-18, 2018, Qingdao, China)**

Some wonderful moments



 NUTHOS-12 (Oct.14-18, 2018, Qingdao, China)

Chinese traditional artistic performance



Chinese traditional music



Staff from SPIC Research Institute

 NUTHOS-12 (Oct.14-18, 2018, Qingdao, China)

Technical Tour



AP1000



CAP1400

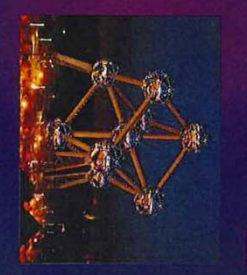


**Thank you all for
contribution to NUTHOS-12**

APPENDIX E
 Informal Proposal for NURETH-19 in Brussels

**NURETH -19
 @ BRUSSELS**

AUGUST – SEPTEMBER 2021
 ORGANISERS: SCK-CEN & WU



SCK•CEN – Strong nuclear history



Belgian Nuclear Research Center

- Established in 1952
- More than 750 employees
- Peculiar applications of radioactivity
- Safety of nuclear installations
- Management of radioactive waste
- Radiation protection

IAEA/CERN cooperation
 SCK-CEN Academy
 SNS Sponsor
<http://www.sckcen.be/>

 1 st Reactor in the world Reactor of the US (1954)	 First of innovative nuclear fuel (1956)	 High performance reactor (1960)
 World's first international laboratory for solid state waste disposal (WASST)	 First of international accelerator driven system (IDS/ATBE)	 World's first international reactor for the production of nuclear waste (MIRVA)

SCK•CEN – MYRRHA for the future



Belgian government approves funding for Myrrha



- Accelerator Driven System
- Fast spectrum research infrastructure
- Safe, efficient and waste-reducing
- Reactor for the world
- Materials test for new reactors
- European IFF technology pilot plant
- Heavy liquid metal technology (as with large scale facilities)
- Strong European and international R&D network
- <https://www.myrrha.be/>

WU – Thermal hydraulic experts

von Karman Institute for Fluid Dynamics
 International Research Center specialized in Fluid Dynamics
 Established in 1956 by Theodore von Karman
 Mission: pushing in research through research
 100 employees + 100 students (PhD + Research Master)
 Three departments:
 Aeronautical and Aerospace (A3)
 Propulsion and propulsion (P3)
 Environmental and Applied Fluid Dynamics (E3)
<http://www.wu.ac.be/>

 Department activities: Development of a reactor	 Nuclear activities: Operation of MIRVA
--	---

Brussels - Attractions



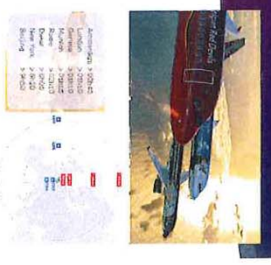
The SQUARE - Location



- ▶ Heart of the historical city centre of Brussels
- ▶ Surrounded by 7000 hotel rooms within 10' walk
- ▶ 5 min walk from Grand Place and most touristic sites
- ▶ 2 min walk from Central Station

Brussels - Accessibility

- ▶ Brussels airport
- ▶ 23 million passengers
- ▶ Direct flights from over 200 destinations
- ▶ 17 min to city centre
- ▶ High speed train
- ▶ Eurostar (GB), Thalys (F/N/D), TGV (F), CEE (D)
- ▶ Car
- ▶ Local
 - ▶ Public transport: metro, tram, bus
 - ▶ Metered taxi
 - ▶ Bike rental @ 350 points in the city 24/24



The SQUARE - Rooms & Equipment

- ▶ 4 auditoria (1.200/800/300/150 people)
- ▶ 23 studios (2 to 200 people)
- ▶ Modular hall of 4000 m²
- ▶ 1000 m² floors between the auditoria
- ▶ HD audiovisual equipment
- ▶ Square GUSTO catering
- ▶ Public restaurant Kwint
- ▶ <https://www.square-brussels.com/>






NURETH - Schedule

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
14:00	Registration	Registration	Registration	Registration	Registration
14:30	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
15:00	Technical program	Technical program	Technical program	Technical program	Technical program
15:30	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break
16:00	Technical program	Technical program	Technical program	Technical program	Technical program
16:30	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
17:00	Registration	Registration	Registration	Registration	Registration
17:30	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
18:00	Registration	Registration	Registration	Registration	Registration
18:30	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
19:00	Registration	Registration	Registration	Registration	Registration
19:30	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
20:00	Registration	Registration	Registration	Registration	Registration

NURETH – Local organizers

- ▶ Karlien Van Tichelen (SCK•CEN)
karlien.van.tichelen@sckcen.be
- ▶ Philippe Planquart (VKI)
Philippe.planquart@vki.ac.be
- ▶ Ferry Roelofs (NRG)
Ferry.Roelofs@nr.nl

NURETH – Technical visits








- ▶ Heavy liquid metal laboratory
- ▶ Underground laboratory for waste disposal
- ▶ Wind tunnel facilities
- ▶ World unique facilities
- ▶ European maintenance center
- ▶ High flux reactor

LOVE TO MEET YOU



IN THE HEART OF EUROPE