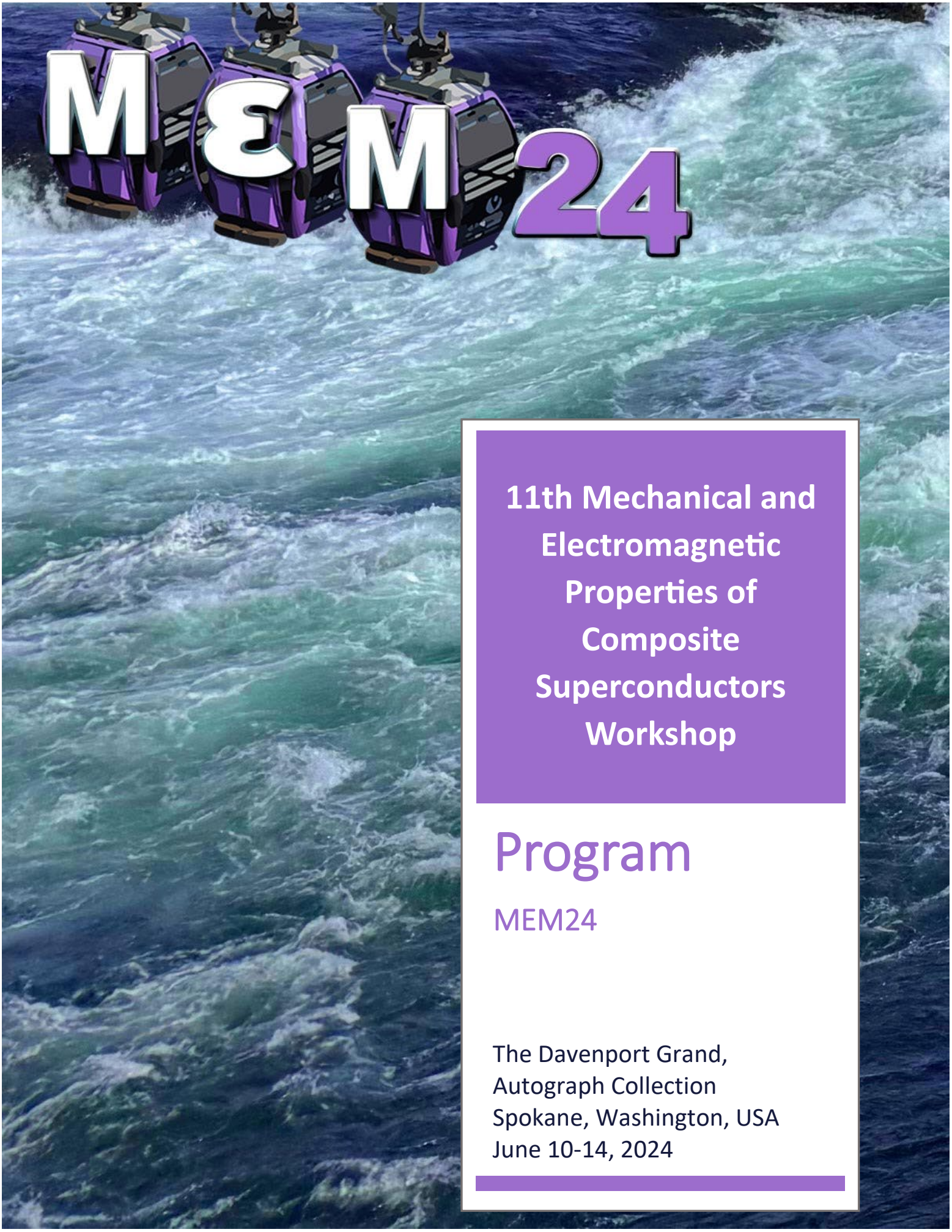


11th Mechanical and Electromagnetic Properties of Composite Superconductors Workshop

Program

MEM24

The Davenport Grand,
Autograph Collection
Spokane, Washington, USA
June 10-14, 2024

MEM24 General Schedule

Monday, June 10, 2024

16:00 – 19:00 Welcome Reception and Registration Check-in at *Terrace Room West*

Tuesday, June 11, 2024

8:00 – 18:30 Workshop Meeting Sessions at *Birch Ballroom*
12:30 – 14:00 Lunch at *Cedar Ballroom*

Wednesday, June 12, 2024

8:30 – 16:45 Workshop Meeting Sessions at *Birch Ballroom*
12:10 – 13:40 Lunch at *Cedar Ballroom*
16:45 – 18:45 Walk to the Spokane Falls — HUNTINGTON Park & Skyride Gondola
MEM24 GROUP PHOTOGRAPH
19:00 – 22:00 MEM24 Banquet at *Terrace Room East*

Thursday, June 13, 2024

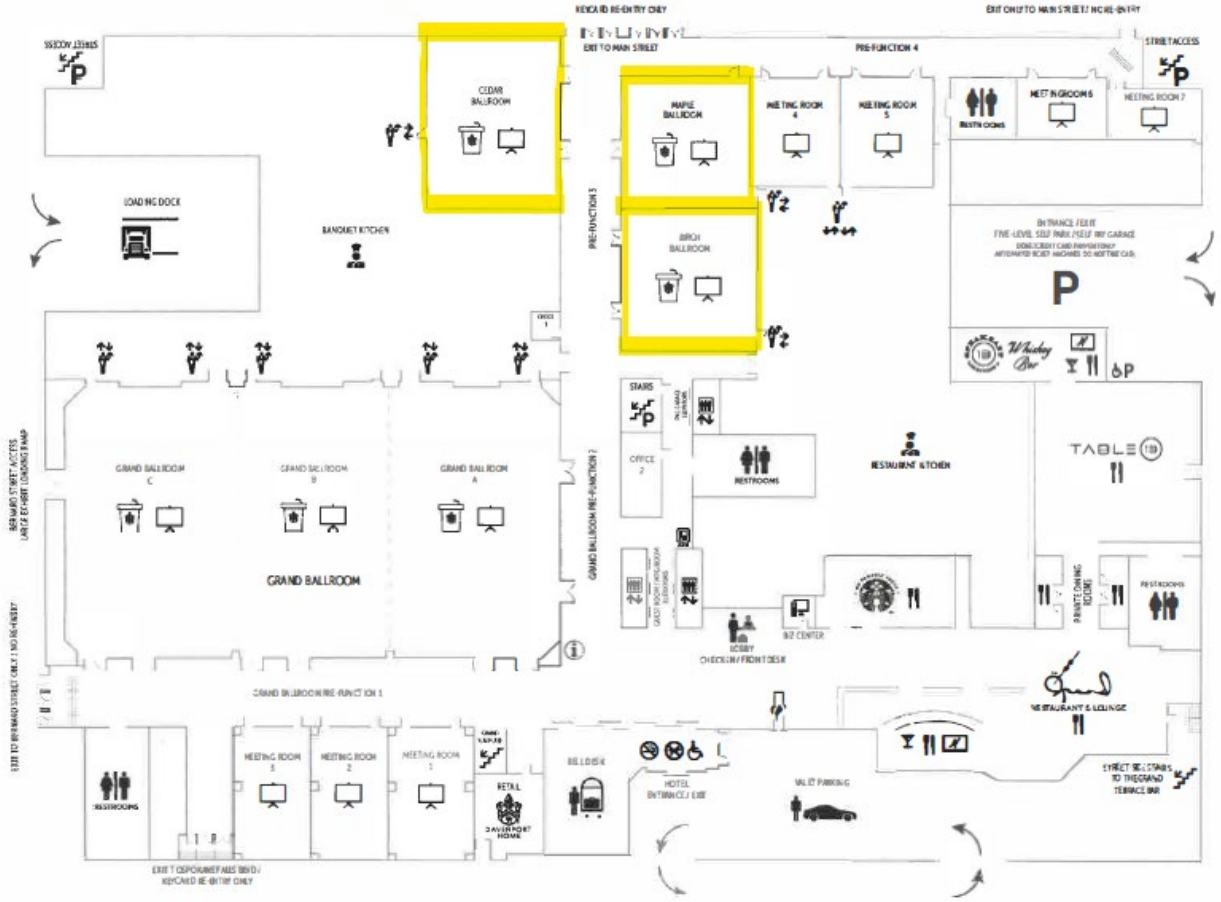
8:30 – 17:45 Workshop Meeting Sessions at *Birch Ballroom*
12:10 – 13:40 Lunch at *Cedar Ballroom*

Friday, June 14, 2024

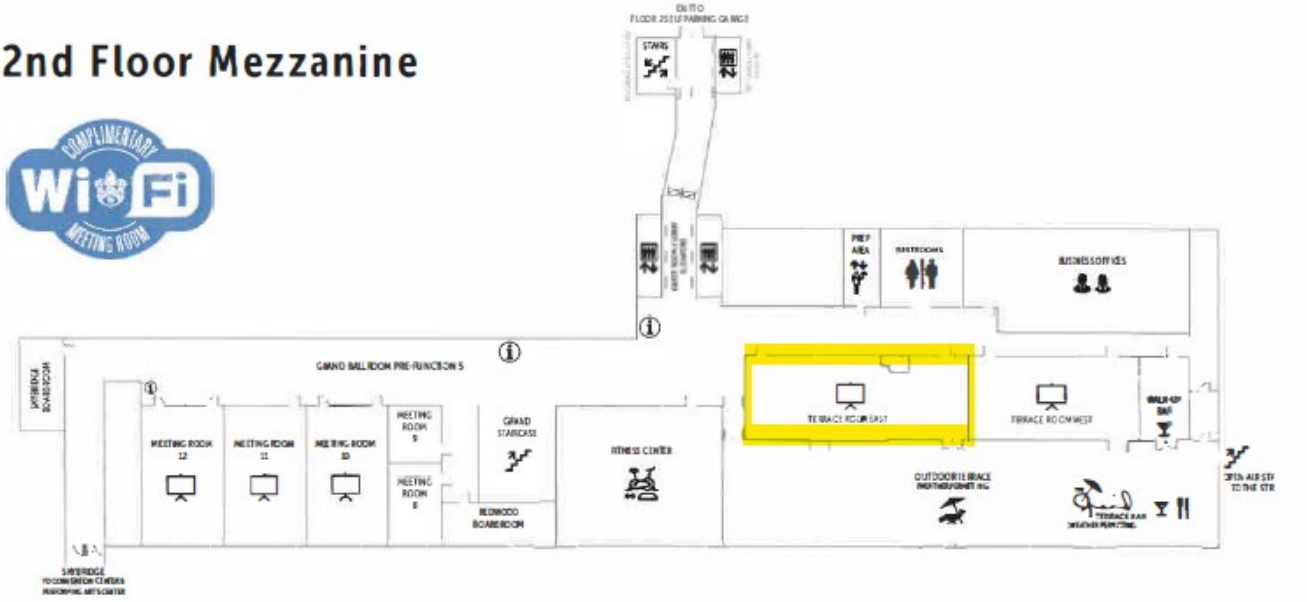
8:30 – 13:30 Workshop Meeting Sessions at *Birch Ballroom*
12:30 – 13:00 Lunch Boxes at *Birch Ballroom*
15:00 – 20:00 MEM24 Excursion — Cruise on Lake Coeur d'Alene (Idaho State)

Locations of the Birch, Cider, and Maple ballrooms (Ground Floor), as well as the Terrace Room East (2nd Floor Mezzanine), are highlighted in the Davenport Grand hotel floor plan shown below. Terrace Room West is adjacent to Terrace Room East.

Ground Floor / Lobby



2nd Floor Mezzanine



Welcome Reception & Registration Check-in at *Terrace Room West*

Monday, June 10

Attendees Arrival and Registration Check-in (16:00 - 19:00)

Technical Program — DAY 1

All Technical Sessions at *Birch Ballroom* & Lunch *at Cedar Ballroom*

Tuesday, June 11						
Talk ID#	Time	Minutes	Presenter First & Last Name	Presenter Affilition	Presentation Title	
	8:00	15	Najib Cheggour	ASC-NHMFL-FSU, USA	Opening Remarks	
Session 1: Nb_3Sn, Nb_3Al, and MgB_2 Conductors & Cables — Updates and General Properties						
Chairs: Gen Nishijima (NIMS) & Maria Baldini (FNAL)						
TuM-01	8:15	30	**Simon C. Hopkins**	CERN, Switzerland	Nb_3Sn Wire performance and prospects for energy-frontier accelerator magnet applications	**Invited**
TuM-02	8:55	20	GianMarco Bovone	University of Geneva, Switzerland	Grain-boundary and oxide-nanoparticle contributions to the layer J_c of internally oxidized Nb_3Sn wires	
TUM-03	9:25	30	**Akihiro Kikuchi**	NIMS, Japan	The Ultrafine superconducting wires and bundled cables	**Invited**
	10:05	10	**COFFEE BREAK**			
Session 2: Nb_3Sn and MgB_2 Conductors & Cables — Electromechanical Properties						
Chairs: Bernardo Bordini (CERN) & Akihiro Kikuchi (NIMS)						
TuM-04	10:15	20	Najib Cheggour	ASC-NHMFL-FSU, USA	Surveying the irreversible strain limit and microstructure of multiple RRP® Nb_3Sn wires in light of the δ-CuSn phase disease	
TuM-05	10:45	20	Mio Nakamoto	QST, Japan	Neutron diffraction measurements of transverse compression effects on Cu-Nb reinforcement for bronze route Nb_3Sn wires	
TuM-06	11:15	30	**Carmine Senatore**	University of Geneva, Switzerland	Stress tolerance and degradation mechanisms of accelerator-grade Nb_3Sn wires under transverse compression	**Invited**
TuM-07	11:55	20	Shutaro Machiya	Daido University, Japan	Measurement of mechanical behavior of 11B enriched MgB_2 wire using pulsed neutron source	
	12:30	90	**LUNCH (provided)**			
Session 3: Nb_3Sn Cables and Magnets — Design & Testing						
Chairs: Satoshi Awaji (Tohoku Univ.) & Carmine Senatore (Geneva Univ.)						
TuA-08	14:00	30	**Giorgio Vallone**	LBNL, USA	Assessing the impact of multi-axial loads on the performance of Nb_3Sn coils for particle accelerator magnets	**Invited**
TuA-09	14:40	30	**Peter McIntyre**	Texas A&M University, USA	Structured cable-in-conduit for stress management in high-field dipoles	**Invited**
TuA-10	15:20	20	Satoshi Awaji	HFLSM, Tohoku University, Japan	Electromechanical behaviors of CuNb/Nb_3Sn Rutherford Cables and Coils for High Field Cryogen-free Superconducting Magnet	
	15:50	15	**COFFEE BREAK**			
TuA-11	16:05	30	**Alice Moros**	CERN, Switzerland	Unveiling root causes of Nb_3Sn coil performance limitations for a reliable fabrication of HL-LHC magnets	**Invited**
TuA-12	16:45	20	Maria Baldini	FNAL, USA	Lessons Learned from Fabrication and Test of 13 Nb_3Sn Quadrupoles for the High Luminosity Large Hadron Collider	
TuA-13	17:15	20	Maria Baldini	FNAL, USA	Development and test of a large-aperture Nb_3Sn cos-theta dipole coil with stress management	
Session 4: Nb_3Sn — Linking Conductor Electro-Mechanical Properties to Magnet Performances						
Chairs: Carmine Senatore (Geneva Univ.) & Alice Moros (CERN)						
	17:45	45	**General Discussion on Nb_3Sn Conductors & Magnets**			
	18:30		**END of DAY 1**			
			DINNER (on your own)			

Technical Program — DAY 2

All Technical Sessions at *Birch Ballroom*

Lunch *at Cedar Ballroom* & Banquet at *Terrace Room East*

Wednesday, June 12						
Talk ID#	Time	Minutes	Presenter First & Last Name	Presenter Affilition	Presentation Title	
	8:30	10	Najib Cheggour	ASC-NHMFL-FSU, USA	Opening Remarks	
Session 5: Bi-2212 Conductors & Cables — Electromechanical Properties **Chairs: Peter McIntyre (Texas A&M Univ.) & Kozo Osamura (RIAS)**						
WeM-01	8:40	20	Najib Cheggour	ASC-NHMFL-FSU, USA	Densification effects on critical-current dependence on longitudinal strain in $Bi_2Sr_2CaCu_2O_{8+x}$ round wires	
WeM-02	9:10	20	Arend Nijhuis	University of Twente, The Netherlands	Critical current under transverse pressure in impregnated Bi-2212 Rutherford cables up to 200 MPa and 11 T at 4.2 K	
WeM-03	9:40	30	**Alex Otto**	Solid Material Solutions, USA	Bi2212 with reinforcement, electrical performance and loss to meet the requirements for specific coil applications	**Invited**
	10:20	20	**COFFEE BREAK**			
Session 6: Bi-2212 Magnets — Design & Testing **Chairs: Alexander Otto (SMS) & Arend Nijhuis (Twente Univ.)**						
WeM-04	10:40	20	Emma Martin	ASC-NHMFL-FSU, USA	Investigating Reinforcement Methods for Bi-2212 Magnets	
WeM-05	11:10	20	Aixia Xu	ASC-NHMFL-FSU, USA	Feasibility demonstration of laser ultrasonics as effective non-destructive testing tool for high field superconducting magnets	
Session 7: Bi-2223 Conductors, Cables & Magnets — Electromechanical Properties **Chairs: Alexander Otto (SMS) & Arend Nijhuis (Twente Univ.)**						
WeM-06	11:40	20	Gen Nishijima	NIMS, Japan	Superconducting magnet for magnetic refrigeration system	
	12:10	90	**LUNCH (provided)**			
Session 8: ReBCO Coated Conductors — General Properties & Opportunities **Chairs: Damian Hampshire (Durham Univ.) & Takanobu Kiss (Kyushu Univ.)**						
WeA-07	13:40	30	**Bernardo Bordini**	CERN, Switzerland	The superconducting magnets of the Muon Collider – a study case for a future HEP machine	**Invited**
WeA-08	14:20	20	Jiamin Zhu	Shanghai Superconductor	The progress of the REBCO tapes in Shanghai Superconductor Technology Co. Ltd.	
WeA-09	14:50	20	Maxim Marchevsky	LBNL, USA	Defect mapping and quench propagation velocity measurements in HTS conductors using Hall array magnetometry	
WeA-10	15:20	20	Alex Otto	Solid Material Solutions, USA	Lamination reinforcement of HTS tapes to enable much broader and more cost-effective utilization in key applications	
WeA-11	15:50	20	Garfield Murphy	ASC-NHMFL-FSU, USA	Methods for polishing and microscopy analysis of REBCO-coated conductors	
	16:20	20	**COFFEE BREAK**			
	16:45 - 18:45		**WALK to the SPOKANE FALLS — HUNTINGTON PARK & SKYRIDE GONDOLA (RIDES VOLUNTARY) — MEM24 GROUP PHOTOGRAPH**			
	19:00 - 22:00		**MEM24 BANQUET at the DAVENPORT GRAND VENUE**			
	22:00		**END of DAY 2**			

Technical Program — DAY 3

All Technical Sessions at *Birch Ballroom* & Lunch *at Cedar Ballroom*

Talk ID#	Time	Minutes	Presenter First & Last Name	Presenter Affiliation	Presentation Title	
Thursday, June 13						
	8:30	10	Najib Cheggour	ASC-NHMFL-FSU, USA	Opening Remarks	
Session 9a: ReBCO Coated Conductors — Electromechanical Properties **Chairs: Takanobu Kiss (Kyushu Univ.) & Danko van der Laan (ACT)**						
ThM-01	8:40	20	Yifei Zhang	SuperPower Inc., USA	Study of a novel hybrid slitting method for REBCO tapes and edge cracks propagation analysis	
ThM-02	9:10	30	**Hyung-Seop Shin**	Andong National University, South Korea	Evaluation of the edge-Cu Layer effect on delamination strength for various Cu-Stabilized REBCO tapes using the anvil test method	**Invited**
	9:50	20	**COFFEE BREAK**			
Session 9b: ReBCO Coated Conductors — Electromechanical Properties **Chairs: Hyung-Seop Shin (Andong National Univ.) & Najib Cheggour (Florida State Univ.)**						
ThM-03	10:10	20	Takanobu Kiss	Kyushu University, Japan	Development of a continuous bending test setup for REBCO coated conductors applicable to a small bending diameter region less than 10 mm	
ThM-04	10:40	20	Kozo Osamura	RIAS, Japan	Bending Strain Dependence of Critical Current in HT- SC Wires	
ThM-05	11:10	20	Rastislav Ries	Institute of Electrical Engineering, Slovakia	Superconducting properties, bending limits and microstructure of the new-generation filamentized REBCO tapes intended for fusion magnets	
ThM-06	11:40	20	Tatsunori Okada	HFLSM, Tohoku University, Japan	In-plain domain control of REBCO coated conductors by bending strain and its effects on superconducting properties	
	12:10	90	**LUNCH (provided)**			
Session 10: ReBCO Coated-Conductor Cables — Electromechanical Properties **Chairs: Yifei Zhang (SuperPower) & Bai Song (Shanghai Superconductor)**						
ThA-07	13:40	30	**Venkat Selvamanickam**	University of Houston, USA	Electromechanical properties of REBCO tapes and wires	**Invited**
ThA-08	14:20	30	**Danko van der Laan**	Advanced Conductor Technologies, USA	Development of the next generation of CORC® cables and wires with improved bending flexibility and in-field performance for high-field magnet applications	**Invited**
ThA-09	15:00	20	Jeremy Weiss	Advanced Conductor Technologies, USA	Implications of current sharing in CORC® cables and CICC	
	15:30	20	**COFFEE BREAK**			
ThA-10	15:50	20	Arend Nijhuis	University of Twente, The Netherlands	Characterization of ReBCO tapes and their performance in full-size ReBCO CORC® 20 T class CICCs for fusion; experiments and modeling	
ThA-11	16:20	30	**Peter McIntyre**	Texas A&M University, USA	REBCO blocks-in-conduit: structured cable, stress management, transposition, and volumetric cooling for high-field insert windings for toroids and solenoids	**Invited**
Session 11: ReBCO Coated-Conductors & Cables — Their Robustness & Limitations **Chairs: Peter McIntyre (Texas A&M Univ.) & Venkat Selvamanickam (Houston Univ.)**						
	17:00	45	**General Discussion on ReBCO Coated-Conductors & Cables**			
	17:45		**END of DAY 3**			
			DINNER (on your own)			

Technical Program — DAY 4

All Technical Sessions & Lunch at *Birch Ballroom*

Friday, June 14						
Talk ID#	Time	Minutes	Presenter First & Last Name	Presenter Affilition	Presentation Title	
	8:30	10	Najib Cheggour	ASC-NHMFL-FSU, USA	Opening Remarks	
Session 12: ReBCO Coated-Conductor Magnets **Chairs: Maxim Marchevsky (LBNL) & Robert Sobota (Bruker BioSpin AG)**						
FrM-01	8:40	30	**Satoshi Awaji**	HFLSM, Tohoku University, Japan	Mechanical design of HTS coils for 33T cryogen-free superconducting magnet	**Invited**
FrM-02	9:20	20	Rui Diaz-Pacheco	Commonwealth Fusion Systems, USA	Electromechanical properties of SPARC CS and PF superconductor cables under relevant transverse and axial compression	
FrM-03	9:50	20	Yunfei Gao	Kyoto University, Japan	Development of mechanically and electrically robust stator winding for fully high-temperature superconducting generator	
	10:20	20	**COFFEE BREAK**			
Session 13: ReBCO Coated Conductors — Linking Conductor Electro-Mechanical Properties to Magnet Performances **Chairs: Damian Hampshire (Durham Univ.) & Satoshi Awaji (Tohoku Univ.)**						
	10:40	40	**General Discussion on ReBCO Coated Conductors & Magnets**			
Session 14: Electromechanical Benchmarking and Standardization **Chairs: Gen Nishijima (NIMS) & Tatsunori Okada (Tohoku Univ.)**						
FrM-04	11:20	30	**Kozo Osamura**	RIAS, Japan	Standardization of test methods for SC wire in IEC TC90	**Invited**
FrA-05	12:00	20	Damian P. Hampshire	Durham University, UK	Large scale verification of Nb_3Sn and Nb-Ti superconducting strands for ITER	
	12:30	30	**LUNCH (provided boxed lunch)**			
Session 15: Electromechanical Metrology and Standardization **Chairs: Gen Nishijima (NIMS) & Tatsunori Okada (Tohoku Univ.)**						
	13:00	30	**General Discussion on Electromechanical Metrology & Standardization Needs**			
	13:30		**CLOSING**			
	15:00 - 20:00		**MEM24 EXCURSION — CRUISE ON LAKE COEUR D'ALENE (IDAHO)**			

Cruise Graciously Sponsored by CBMM

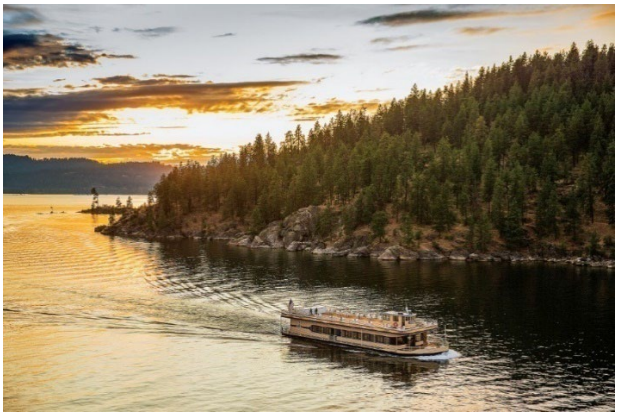
CBMM | Niobium Nb

MEM24 Excursion — Cruise on Lake Coeur d'Alene, State of Idaho

Friday June 14, 15:00 – 20:00

Cruise Graciously Sponsored by CBMM

CBMM | Niobium Nb



15:00	Bus (*MTR Western* Company) departs from the Davenport Grand, Spokane
15:45	Bus arrives to the Coeur d'Alene Golf Resort, State of Idaho
16:00 – 16:30	Board the *Shadow* Boat (*Lake Coeur d'Alene Cruises* Company)
16:30 – 18:30	A two-hour cruise on the lake Coeur d'Alene
19:00	Bus departs Coeur d'Alene Golf Resort
20:00	Bus arrives to the Davenport Grand hotel, Spokane

MEM24

The Davenport Grand,
Autograph Collection
Spokane, Washington, USA

June 10-14, 2024