



AGENDA
ASHRAE TC 4.7 ENERGY CALCULATIONS – MAIN MEETING
ROOM 101A, LONG BEACH CONVENTION CENTER, LEVEL 1,
LONG BEACH, CA
TUESDAY, JUNE 27, 6:00-8:30 PM

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|---|-----------|
| 1. Roll call and introductions (5 minutes) | Balbach |
| 2. Accept agenda & approve minutes of previous meeting (10 minutes) | Abushakra |
| 3. Announcements/Liaisons (5 minutes) | Abushakra |
| 4. Membership (5 minutes) | Abushakra |
- 4.1 Five VM will roll off after Long Beach. We will have Eight VM as a result. The Executive Committee will convene and decide how many CM will roll on as VM. It helps to have all TC officers as VM. So far, Neymark and Huang agreed to roll-on based on an executive committee discussion. By the Manual of Procedures, the maximum number of voting members on a committee is 18. However, the drawback of a high number of VM would be the quorum in meetings.
- 4.2 Provisional Corresponding Members should go to: Onebuilding.org, to Subscribe to the TC4.7 Mailing List (TC47-L). Once subscribed, PCM, will stay up-to-date with the TC4.7 business.
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| 5. Subcommittee reports | |
| 5.1 Applications (10 minutes) | Judkoff |
| 5.2 Data-Driven Modeling (10 minutes) | Fontanini |
| 5.3 Simulation and Component Models (10 minutes) | Huang |
| 5.4 Research (15 minutes) | Haberl |
- 5.4.1 Research Projects
- Completed Projects
 - Update of any.
 - Awarded Projects
 - 1741-RP, Understanding Fan Coil Components and how they relate to Energy Consumption and Energy Modeling; Responsible Committee: TC 5.3 (Room Air Distribution); Co-sponsoring TCs: TC 4.7. Update.
 - 1661-WS Development of Near-Optimal Control Sequence for Chiller Plants with Water Side Economizer using Dynamic Models (PES Report). Update.
 - Approved RTAR
 - 1763-RTAR Development of an Improved Inverse Model Toolkit (RP1050) and Diversity Factor Toolkit (RP1093) for Analyzing Bldg Energy Savings from Time Series Data (RTAR accepted July 29, 2015). Author (Haberl). Update.
 - 1816-RTAR, Reporting the Energy Use and Heat Gain from Imaging Equipment. Responsible Committee: TC 9.6 (Healthcare Facilities); Co-Sponsors: None; Status: Accepted with comments. Update.
 - Approved WS
 - Update if any.
 - Returned WS with Comments
 - 1748-WS, Assess and Implement Natural and Hybrid Ventilation Models in Whole-Building Energy Simulations - Phase 2. Authors (Huang and Fantonini) Update.
 - Rejected RTAR to be Revisited
 - 1813-RTAR, Development of an Accuracy Test Method for Residential Attic Duct System Simulations in Whole-Building Energy Simulation Programs. (Mini). Update.
 - WS, RTAR, Requests for Co-sponsorship
 - 1769-RTAR “Experimental Evaluation of the Efficiency of Belt Drives for Fans”, TC 5.1 Fans lead. TC 4.7 voted (3-2-2) to cosponsor. Update.
 - 1752-WS-or-RTAR “A guideline for Calculating the Avoided Source Energy Consumption Due to Waste Energy Recovery (WER) AND Heat Pump (HP) Technologies (MTG-ASEC). Update.
 - New RTAR
 - xxxx-RTAR “Toolkit for Passive Solar and Whole Building Simulations”. The tool will be independent from commercial software; like hvac01, and hvac02 toolkits. How to get to netzero. Lead author is Montana State University. Update.

- xxxx-RTAR “Merged HVAC01, HVAC02, Loads toolkit”. Lead author TAMU. Haberl and Muehleisen. Update.

5.5 Handbook (10 minutes)

Kolderup

5.6 Program (15 minutes)

Cockerham

Long Beach, June 2017

1. Urban-Scale Building Energy Modeling, Part 5 (Co-Sponsoring. Seminar. Abushakra)
2. Urban-Scale Building Energy Modeling, Part 6 (Co-Sponsoring. Seminar. New)

Houston, January 2017, and beyond

1. SPC 205 (Seminar. Standards Subcom. Barnaby, McDowell)??
2. Historical Committee (Seminar. Haberl)??
3. Aging Grid and Power Lines Reaching Normal Rating Capacity – Load Growth Projection Modeling (Seminar. DDM Subcom. Abushakra)??
4. Building Energy Modeling Software Testing with ANSI/ASHRAE Standard 140 (Seminar. Standards Subcom. Neymark)
5. New Advances in Simulating Fenestration Systems (Seminar. SCM Subcom. Haberl)??
6. SPC 209 Energy Simulation Aided Design (Seminar. Standards Subcom. Kolderup)??
7. Data Visualization (Seminar. Application Subcom. Balbach)??
8. What does the difference between data driven models and measurements mean? (Seminar. DDM Subcom. Chair)??.
9. So you think you're Gaussian? Many regression models assume normal distributions (Seminar. DDM Subcom. Fontanini)??
10. How to remove outliers from data before using DDM (Seminar. DDM Subcom. Chair)??
11. Other Ideas??

5.7 Historical (5 minutes)

Haberl

Historical Committee - 125 Anniversary – is looking for History Papers. Contact Haberl.

5.8 Standards (15 minutes)

Neymark

- SSPC 140 SMOT for Evaluation of Building Energy Analysis Computer Programs
 - Internal Revenue Service Section 179D Tax Deductions – Citation of Std 140
- SPC 205 Standard Representation of Performance Simulation Data for HVAC and Other Facility Equipment
 - SPC 209P Energy Simulation Aided Design

Neymark

Judkoff

Barnaby

Kolderup

New

5.9 Web Site (5 minutes) (<https://tc0407.ashraetcs.org/>)

6. Related activities reports (10 minutes)

SPC 191 Standard for the Efficient Use of Water in Building and Mechanical Systems
 MTG.O&MEE Operations and Maintenance Activities That Impact Energy Efficiency
 MTG-OBB Occupant Behavior in Buildings
 MTG.BIM Building Information Modeling
 MTG ACR Air Change Rates (Contact Dennis Knight to join this MTG)
 TC 2.8 Building Environmental Impacts and Sustainability
 TC 4.1 Load Calculation Data and Procedures
 TC 4.2 Climatic Information
 TC 4.3 Infiltration & Ventilation Requirements
 TC 4.5 Fenestration
 TC 6.5 Radiant Heating and Cooling
 TC 7.5 Smart Building Systems
 TC 7.6 Building Energy Performance
 BuildingSMART (formerly IAI International Alliance for Interoperability)
 IBPSA: USA, Canada, World
 BPI-2400-S-2011 Standardization Qualification of Whole-house Energy Savings Est. Guideline 14
 IEA Annex 60 Modelica for Building Simulations
 IEA Annex 66 Occupant Patterns

7. Awards Nomination

2017-2018 Hightower Award: Nominations due to Section head by September 1, 2017
 2017-2018 Service to ASHRAE Research Award: Nominations to RAC Liaison by September 1, 2017

8. Old Business

Abushakra

9. New business

Abushakra

Urban-scale Building Energy Modeling, a proposed move from TC1.5 to TC4.7

10. Adjourn

Abushakra

RESOURCES

Deadlines

Chicago, January 2018



This is the overall publication schedule for the ASHRAE 2018 Winter Conference, Chicago. For specific details and questions regarding these dates, please contact the appropriate Track Chair.

Wednesday, March 01, 2017	Conference Paper Abstracts, Technical Papers and Paper Session Requests Due
Monday, March 27, 2017	Conference Paper Abstract Accept/Reject Notifications
Friday, June 02, 2017	Website Opens for Seminar, Forum, Debate, Panel and Workshop Proposals
Friday, July 07, 2017	Final Conference Papers Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment); Request for Conference Paper Sessions Due
Monday, July 24, 2017	Conference Paper accept/reject notifications
Tuesday, August 01, 2017	Seminar, Forum, Workshop and Paper Proposals Due
Monday, August 07, 2017	Revised Conference Papers/Final Technical Papers Due
Monday, August 21, 2017	Conference and Technical Paper Final Accept/Reject Notifications
Wednesday, September 06, 2017	Seminar, Forum, Workshop Accept/Reject Notifications
Friday, December 01, 2017	Upload of PPTs Begin
Monday, January 08, 2018	All PPTs Due Online
Wednesday, January 17, 2018	Final Day for Commercialism Revision Upload prior to on-site
Saturday, January 20, 2018	Speaker's Lounge Opens

Chicago Program Tracks

Track 1: [Systems and Equipment](#)

Track Chair: Carrie Anne Crawford

Email: carriecrawford@eeace.com

Track 2: [Fundamentals and Applications](#)

Track Chair: Kevin Marple

Email: kmarple@benzco.com

Track 3: [Standards, Guidelines and Codes](#)

Track Chair: Corey Metzger

Email: corey.metzger@resourcece.com

Track 4: [Earth, Wind & Fire](#)

Track Chair: Ashish Rakheja

Email: ashish.rakheja@aeonconsultants.in

Track 5: [Transportation IAQ and Air Conditioning](#)

Track Chair: Dimitris Charalambopoulos

Email: dimitris@ashrae.gr

Track 6: Tall Buildings
Track Chair: Leticia Neves
Email: leneves@gmail.com

Track 7: Modeling Throughout the Building Life Cycle
Track Chair: Joseph Farrantello
Email: j.farrantello@gmail.com

Track 8: Heat Exchange Equipment
Track Chair: Vikrant Aute
Email: vikrant@umd.edu

Track 9: Refrigerant Mini Track @ Expo*
Track Chair: Gary C. Debes
Email: gcdebes@verizon.net
*Section will determine topics, speakers, session types, etc.

Track 10: Residential Mini Track @ Expo*
Track Chair: Gary C. Debes
Email: gcdebes@verizon.net
*Topics, speakers, session types, etc. will be determined by the cognizant committee.

Houston, June 2018 Tracks

Track 1: Systems and Equipment
Track 2: HVAC&R Fundamentals and Applications
Track 3: District Energy and Cogeneration Plants
Track 4: Safeguarding our HVAC&R System
Track 5: Residential: Modern Buildings in Hot & Humid Climates
Track 6: Professional Skills
Track 7: Controls: Troubleshooting Building Management Systems
Track 8: Research Summit
Track 9: Mini-Track: HVAC&R Analytics

ASHRAE Research Strategic Plan 2010-2018

Goal 1: Maximize the Actual Operational Energy Performance of Buildings and Facilities

Goal 2: Progress toward Advanced Energy Design Guides (AEDG) and Cost-Effective Net-Zero-Energy (NZE) Buildings

Goal 3: Reduce Significantly the Energy Consumption of HVAC&R, Water Heating and Lighting in Existing Homes

Goal 4: Significantly Advance our Understanding of the Impact of Indoor Environmental Quality (IEQ) on Work Performance, Health Symptoms and Perceived Environmental Quality in Offices, Providing a Basis for Improvements in ASHRAE Standards, Guidelines, HVAC&R Designs and Operation Practices

Goal 5: Support the Development of ASHRAE Energy Standards and Reduce Effort Required to Demonstrate Compliance

Goal 6: Building Information Modeling of Energy Efficient, High Performing Buildings. BIM is a Rapidly Developing Field of Knowledge which Stretches Beyond the Traditional Boundaries of the HVAC&R Industry to the Wider Construction Sector

Goal 7: Support Development of Tools, Procedures and Methods Suitable for Designing Low-Energy Buildings

Goal 8: Facilitate the Use of Natural and Low Global Warming Potential (GWP) Synthetic Refrigerants and Seek Methods to Reduce their Charge

Goal 9: Support the Development of Improved HVAC&R Components Ranging from Residential through Commercial to Provide Improved System Efficiency, Affordability, Reliability and Safety

Goal 10: Significantly Increase the Understanding of Energy Efficiency, Environmental Quality and the Design of Buildings in Engineering and Architectural Education

Goal 11: Understand Influences of HVAC&R on Airborne Pathogen Transmission in Public Spaces and Develop Effective Control Strategies.