

WEDNESDAY

9:00 -
10:30

OPENING PLENARY

Keynote Address by Lynn Bellenger, President, ASHRAE

	room 914	room 900	room 802	room 804-805
	TECHNICAL PAPERS 1A - DAYLIGHT AND ENERGY I CHAIR: SPENCER DUTTON	TECHNICAL PAPERS 1B - EXISTING BUILDINGS AND MODEL CALIBRATION CHAIR: DAVID ELDRIDGE	INVITED SPEAKERS 1C - MODELING FOR CODE AND INCENTIVES CHAIR: ROGER CHANG	INVITED SPEAKERS 1D - IBPSA's BEMBook CHAIR: JOSEPH DERRINGER
10:45 - NOON	<p>R Versage, et.al. Impact of different daylighting simulation results on the prediction of total energy consumption</p> <p>S Kleindienst, M Andersen Solar Heat Surplus and Solar Heat Scarcity: the inclusion of solar heat gain in a daylight analysis</p> <p>W O'Brien, K Kapsis, et.al. Methodology for quantifying the performance implications of intelligent shade control in existing buildings</p>	<p>A Nassiopoulous, F Bourquin Real-time monitoring of building energy behaviour: a conceptual framework</p> <p>G Salvalai, J Pfafferoth, D Jacob Validation of a low-energy whole building simulation model</p> <p>T Leibing, C Reiser, O Baumann Development of a calibration methodology for the energy simulation of an existing building</p>	<p>Tom Paino, NYC Dept of Design & Construction</p> <p>Chris Schaffner, The Green Engineer/LEED EA TAG</p> <p>A discussion focused on experiences with modeling for code applications</p>	<p>The BEMBook system to prepare for the ASHRAE Building Modeling Certification will be discussed and demonstrated.</p>
	TECHNICAL PAPERS 2A - MODELING PROCESS IN PRACTICE CHAIR: OLIVER BAUMANN	TECHNICAL PAPERS 2B - PARAMETRIC MODELING CHAIR: HARVEY BRYAN	INVITED SPEAKERS 2C - BIM TODAY CHAIR: CHIP BARNABY	INVITED SPEAKERS 2D - UTILITY AND PORTFOLIO APPLICATIONS CHAIR: JANE SNOWDON
1:30 - 2:45	<p>K Tupper, C Fluhrer Energy modeling at each design phase: strategies to minimize design energy use</p> <p>S Ali Analysis of procedures and workflow for conducting energy analysis using Autodesk Revit, GBXML, and TRACE 700</p> <p>C Baker, P Vaidya, A D'Souza Modeling protocol for early energy design assistance</p>	<p>E Hale, N Long Enumerating a diverse set of building designs using discrete optimization</p> <p>K Field, M Deru, D Studer Using DOE commercial reference buildings for simulation studies</p> <p>W Sheta, S Sharples A building simulation sustainability analysis to assess dwellings in a new Cairo development</p>	<p>Stephen Roth, Carmelsoft</p> <p>Drury Crawley, Bentley</p> <p>Phil Cunningham, Kling Stubbins</p> <p>Discussion of current status and directions. First of a series of three sessions on this topic.</p>	<p>Christoper Gazze, Con Edison</p> <p>Young Lee, IBM</p> <p>Session will present applications under development for modeling with large sets of buildings for specific purposes.</p>
	TECHNICAL PAPERS 3A - DESIGN OPTIMIZATION CHAIR: TIMOTHY MCDOWELL	TECHNICAL PAPERS 3B - SOFTWARE- DEVELOPMENT AND COMPARISON CHAIR: JOSEPH BOROWIEC	FORUM ON ASHRAE's BUILDING MODELING CONFERENCE CHAIR: LYNN BELLENGER	SPONSORS & STUDENTS RECEPTION 5:00pm to 7:00pm - Exhibit Room
3:15 - 4:30	<p>L Peters, M Wetter, et.al. The coupling of ESP-r and GenOpt: a simple case study</p> <p>J Gagne, M Andersen Multi-objective façade optimization for daylighting design using a genetic algorithm</p> <p>D Jacob, S Burhenne, et.al. Optimizing building energy simulation models in the face of uncertainty</p>	<p>Y Pan Visual Eplus: A Chinese interactive graphical user interface (GUI) for EnergyPlus</p> <p>N Kruis Reconciling differences in residential DX cooling models in DOE-2 and EnergyPlus</p> <p>S Andolsun, C Culp, J Haberl EnergyPlus vs DOE-2: The effect of ground coupling on heating-cooling energy of a slab-on-grade house</p>	<p>Forum to consider themes and content of the ASHRAE Conference on Building Modeling, planned for Winter 2011</p>	<p>Sponsors & students only.</p>

THURSDAY

Breakfast Talk: Forum on IBPSA-International Activities. Chip Barnaby.

	room 914		room 900		room 802		room 804-805
	TECHNICAL PAPERS 4A - FACADE AND WINDOW MODELING		TECHNICAL PAPERS 4B - HVAC SYSTEM MODELING		TECHNICAL PAPERS 4C - MODELING OF BUILDING LOADS		INVITED SPEAKERS 4D - DEVELOPER TOOLKITS
	CHAIR: SAM MASON		CHAIR: DAN NALL		CHAIR: ANDREW MCNAMARA		CHAIR: PHILIP HAVES
9:00 - 10:15	S Kasarekar, C Waddell	Space load & system load comparison using energy modeling software	D Kang, R Strand	A new model for calculating the convective and radiant impact of radiators and baseboards in EnergyPlus	M Mirsadeghi, D Costola, et.al.	Distributed simulation in whole building heat, air and moisture performance engineering	Nicholas Long, NREL Richard See, Digital Alchemy Michael Wetter, LBNL
	A Brun, E Wurtz, D Quenard	Experimental and numerical comparison of heat transfer in a naturally ventilated roof cavity	X Li, Y Li, J Seem	Dynamic modeling of mechanical draft counter-flow wet cooling tower with Modelica	G Zimmermann, Y Lu, G Lo	Heat flow modeling of HVAC systems for fault detection and diagnosis	Discussion of new platforms and toolkits for developers to link simulation tools, including EnergyPlus, Radiance and Modelica-based tools to model libraries, data sources and user interfaces.
	M Azarbayjani	Beyond arrows: CFD modeling of new configuration of naturally ventilated double-skin facade in a high rise building	C Miller, C Sekhar	Modeling of the single coil, twin fan air-conditioning system in EnergyPlus	A Jain, A Osborne	Thermodynamics of microclimate: effects of external elements on internal heat gains	
	P Lyons, J Wong, M Bhandari	A Comparison of Window Modeling Methods in EnergyPlus 4.0					
	TECHNICAL PAPERS 5A - MODELING ON A LARGE SCALE I		TECHNICAL SESSION 5B - MODELING OF OCCUPANT BEHAVIOR		TECHNICAL PAPERS 5C - RESIDENTIAL ENERGY		INVITED SPEAKERS 5D - MODELING AND COMMUNICATION
	CHAIR: JEFF HABERL		CHAIR: TIANZHEN HONG		CHAIR: JOHN SCHOTT		CHAIR: ANDREW MCNAMARA
10:45 - NOON	A Rosheidat, H Bryan	Optimizing the effect of vegetation for thermal comfort and heat island mitigation in a hot arid urban environment	R Goldstein, A Tessier, A Khan	Customizing the behavior of interacting occupants using personas	Z Liu, H Kim, M Malhotra, et.al.	Going beyond a RESnet certification for code-compliant simulations	Dave Van Camp, Princeton Engineering Scott Frank, JBB James Kraus, SOM Shillpa Singh, YRG
	C Yimprayoon, M Navvab	Quantification of available solar irradiation on rooftops using orthophotograph and LiDar data	S Dutton, L Shao	Window opening behavior in a naturally ventilated school	M Malhotra, J Haberl	Simulating single-family detached residences designed for off-grid, off-pipe operation	Panel discussion with owner, engineer, architect, and modeler talking about what they expect to get out of modeling and what they expect from the other parties.
	R Brandao, M Alucci	Thermal behavior of urban canyons using numerical modeling, CFD simulation and GIS mapping	G Zimmermann	Agent-based modeling and simulation of individual building occupants	K Otto, R Taylor, et.al.	What does it take for the residential building sector to	

	TECHNICAL PAPERS 6A - DAYLIGHT AND ENERGY II CHAIR: CHRISTOPH REINHART	TECHNICAL PAPERS 6B - RENEWABLE ENERGY CHAIR: JESSICA MCKEE	FINDINGS FROM THE MODELING COMPETITION CHAIR: MICHAEL KARPMAN	INVITED SPEAKERS 6D - MODELING FOR CODES II CHAIR: JEFF HABERL
1:30 - 2:45	<p>R Guglielmetti, S Pless, P Torcellini Integrated daylighting and energy simulations to drive design of a large net-zero building</p> <p>J An, S Mason Integrating advanced daylight analysis into building energy analysis</p> <p>K Lagios, J Niemasz et.al. Animated building performance simulation (ABPS)</p>	<p>R Hendron, J Burch, G Barker Tool for generating realistic residential hot water event schedules</p> <p>D Kang, R Strand Implementation of a model for a wind turbine system in Energyplus</p> <p>S Cho, J Haberl Integrating solar thermal and pv systems in whole building simulation</p>	<p>A discussion with members of the judging committee about what was learned from the submissions and the overall process. Attention to how different models can variously represent the same actuality and to how modelers approached the calibration issues involved in matching to a set of energy bill data.</p>	<p>M Swami, Florida Solar Energy Center Jian Zhang, Pacific Northwest Lab Jeff Haberl, Texas A&M</p> <p>Presentations and discussion on automated tools for code compliance</p>
	TECHNICAL PAPERS 7A - MODELING ON A LARGE SCALE II CHAIR: JORGE GONZALEZ	TECHNICAL PAPERS 7B - CONTROL OPTIMIZATION CHAIR: MICHAEL WETTER	INVITED SPEAKERS 7C - MODELING FOR	BANQUET AND AWARDS CEREMONY 6 - 8:30 pm - Rosenthal Pavilion
3:15 - 4:30	<p>C Amorim, M Cintra, et.al. Energy efficiency code in Brazil: the first public building labelled in Brasilia</p> <p>A Strzalka, U Eicker, et.al. Modeling energy demand for heating at city scale</p> <p>D Quinn, J Fernandez Estimating material usage of road infrastructure in US cities</p>	<p>V Zavala, J Wang, S Leyffer, et.al. Proactive energy management for next-generation building systems</p> <p>P Li, Y Li, J Seem Dynamic modeling and consistent initialization of differential-algebraic equations for centrifugal chillers</p> <p>R Zhang, K Lam Comparison of load performance between first principle based and implementable shading control algorithms</p>	<p>Harvey Bryan, Arizona State University Charles Eley, Architectural Energy, COMNet Daniel Nall, WSP Flack & Kurtz</p> <p>Leading practitioners consider how to make progress towards having models become useful in code-based practice.</p>	<p>KEYNOTE SPEAKER: Dr. William Solecki Director, Institute for Sustainable Cities City University of New York</p> <p>Tickets required</p>

FRIDAY				Breakfast Talk: Urban Atmospheric Modeling. Jorge Gonzalez		
	room 914		room 900		room 802	room 804-805
	TECHNICAL PAPERS 8A - DAYLIGHT MODELING PROCESS AND METHODS CHAIR: SHANTA TUCKER		TECHNICAL PAPERS 8B - UNCERTAINTY AND STATISTICAL METHODS CHAIR: MICHAEL COLGROVE		INVITED SPEAKERS 8C - RUN-TIME COUPLING OF SIMULATION TOOLS CHAIR: BRIAN COFFEY	INVITED SPEAKERS 8C - ASME SOLAR ENERGY DIVISION - ACTIVITIES/BUSINESS MEETING
9:00 - 10:15	M Saxena, G Ward, et.al.	Dynamic radiance - predicting annual daylighting with variable fenestration	S Burhenne, D Jacob, G Henze	Uncertainty analysis in building simulation with monte carlo techniques	Jelena Srebric Michael Wetter Yao-Jung Wen	
	C Reinhart, J Weinold	The daylighting dashboard - a simulation-based analysis for daylit spaces	J Yuan, L Glicksman	Using statistical methods for mapping from initial values to multiple steady states		
	R Manudhane, C Reinhart	Daylight nomographs revisited	B Eisenhower, T Maile, et.al.	Decomposing building system data for model validation and analysis using the Koopman operator	Discussion of a variety of software tools used in the context of a building controls virtual test bed	
	TECHNICAL PAPERS 9A - BUILDING COMPONENT INTERACTION CHAIR: WANGDA ZUO		TECHNICAL PAPERS 9B - HVAC AND BUILDING ENERGY PERFORMANCE CHAIR: ADRIAN TULUCA		INVITED SPEAKERS 9C - CALIBRATION FOR EXISTING BUILDING MODELS CHAIR: MICHAEL BOBKER	INVITED SPEAKERS 9D - RENEWABLE ENERGY APPROACHES CHAIR: JORGE GONZALEZ
10:45 - NOON	N Khan	Use of TAS software to investigate the dynamic thermal performance of a natural ventilation and cooling system	T Webster, KH Lee, et.al.	Influence of supply air temperature on underfloor air distribution (UFAD) system energy performance	Moncef Krarti, University of Colorado, Boulder Kelly Kissock, University of Dayton	Andy Walker, NREL A Urribarri, S Gonzalez, S Mikhail CCNY-CUNY
	C Brown, L Glicksman, et.al.	Toward zero energy buildings: optimized for energy use and cost	Z O'Neill, S Narayanan, et.al.	Model-based thermal load estimation in buildings	Consideration of methods for calibrating models of existing buildings where energy data is available. How do we know what to adjust?	Presentations on a site optimization method & a modular rooftop design for urban scale deployment
	Y Chae, R Strand	Development of a dedicated outdoor air system module for a whole building annual energy simulation program	P Im, J Haberl	Analysis of the Energy Savings Potential in K-5 Schools in Hot and Humid Climates		
	TECHNICAL PAPERS 10A - CFD CASE STUDIES AND APPLICATION CHAIR: GREGORY DOBBS		TECHNICAL PAPERS 10B - GETTING TO ZERO CHAIR: ANUPAM JAIN		INVITED SPEAKERS 10C - BIM TOMORROW CHAIR: SHARIQ ALI	
1:30 - 2:45	L Wang, W Dols, Q Chen	An introduction to the CFD capabilities in CONTAM 3.0	M Karpman	Performance-based incentive program for new buildings: Report from the field	Kimon Omuna, Omuna Inc Vladimir Bazjanic, LBNL Richard See, Digital Alchemy	
	M Popovac	Robust eddy viscosity turbulence modeling with elliptic relaxation for external building flow analysis	M Jones, S Ledinger	Pushing the limits of simulation complexity - simulation of an exhibition center in the U.A.E		
	G Tan, K Venerable	CFD simulation enhances optimization of a data center's expansion process	J Perlman, D Huang, et.al.	Is Real Time Pricing Right For Solar PV?	What is in the works in research and development for the future of BIM and energy modeling?	
	W Zuo, Q Chen	Improvements on the fast fluid dynamic model for indoor airflow simulation				
3:15 - 4:30	CLOSING PLENARY "Moving Modeling Software to Deep Market Penetration" Chair: Peter Douglas , NYSERDA. Panelists: Fiona Cousins , Arup, and Chip Barnaby , Wrightsoft/IBPSA					