Implications of Coupled Occupant Needs and Mechanical System Performance in Buildings

Speaker: Dr. Yang-Seon Kim

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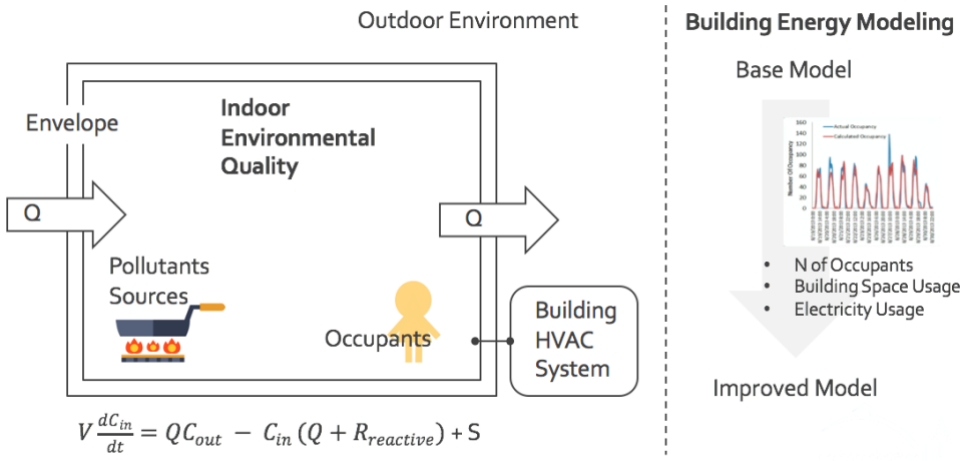
Buildings play an important role in both energy use and human well-being. To support optimization of energy use in existing built environments, it is a pressing need to understand the tradeoffs between building energy use and indoor air quality, as well as the co-benefits between the two. With the measured dataset, this seminar will present how indoor environmental quality changes depending on the outdoor environment, the type and operating conditions of indoor pollution sources, and ventilation conditions. Since indoor environmental quality plays an important role in occupants' health and comfort, it also changes occupants' behavior in buildings. This seminar will introduce how occupants-space related information is important in the building energy study. Finally, the seminar will conclude with a brief introduction to future research plans in the area of energy-efficient building operation systems.



Bio: Dr. Yang-Seon Kim is an assistant professor in Mechanical Engineering Department at Wichita State University (WSU). Before join at WSU, she worked as a Postdoctoral Fellow at the Building Technology & Urban Systems Division at Lawrence Berkeley National Laboratory. Her research looks at the interrelated issues of building energy performance, ventilation, indoor environmental quality, and occupants' impact. She made research contributions on evaluating ventilation rate impacts on indoor air quality through field and laboratory evaluations, and developing a novel method to improve building energy modeling by assessing occupants' impact on building energy usage. She holds a Ph.D. in Mechanical Engineering from the Pennsylvania State University, and M.S. in Mechanical Engineering from Yonsei University.