

Urban Climate Models and their Applications



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Brickyard Orchid House, Room 175
21 E. 6th St., Suite 126B, Tempe

The extent and rate of global environmental changes, whether greenhouse gas-induced warming, deforestation, desertification, or loss in biodiversity, are driven largely by the rapid growth of the Earth's human population. Given the large and ever-increasing fraction of the world's population living in cities, and the disproportionate share of resources used by these urban residents, especially in the global North, cities and their inhabitants are key drivers of global environmental change. Here attention is directed to understanding and predicting the impact of cities on climate.

Ultimately, urban climate effects are due to differences in the exchanges of heat, mass, and momentum between the city and its pre-existing landscape. Thus understanding, prediction, and mitigation of urban climate effects are intricately tied to knowledge of these surface – atmosphere exchanges in cities. Models specifically designed or adapted from urban areas, are being used with increasing frequency to understand current and future urban climates and to evaluate different mitigation and adaptation strategies. A wide variety of such models now exist which range in complexity – yet there has been no systematic evaluation. In this talk the range of urban climate models will be considered, with attention directed to their general characteristics, similarities and differences, and applications.

Sue Grimmond joined KCL in January 2006 after being Assistant, Associate and Full Professor at Indiana University, Bloomington USA. She completed her undergraduate degree (BSc Hons) at the University of Otago, New Zealand, and graduate degrees (MSc and PhD) at The University of British Columbia (under the supervision of Professor Tim Oke). Currently, she is past President of the International Association of Urban Climate (IAUC) and Lead Expert for the WMO on Urban and Building Climatology. Sue is on the editorial boards of Journal of Applied Meteorology and Climatology and Agricultural and Forest Meteorology. In 2006 she was elected Fellow of the American Meteorological Society and awarded Doctor of Science Honoris Causa, from Göteborg University, Sweden.

A reservation is required for this event, as lunch will be served.

This lecture is presented by the School of Geographical Sciences, Decision Center for a Desert City, Global Institute of Sustainability, and Central Arizona-Phoenix Long-Term Ecological Research.

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