

Climate Physics, Climate Models, and Climate Change

Dr. Paul Kushner
University of Toronto

DATE: Friday, March 7, 2014

TIME: 3:30 PM

PLACE: C2045

ABSTRACT: Much of our understanding of the Earth's climate and its future under climate change is based on climate models, which are complex numerical simulations that attempt to capture the principal processes controlling the global distribution of climate variables like temperature, precipitation, and winds. Current generation climate models have become more realistic in their ability to represent recent climate and climatic fluctuations, and there has been real progress in the last decade in public access to the models and their output. The vast data archive of climate model output provides great opportunities for testing climate theory and for rigorous evaluation of the models against observations. A key problem is that the strength and timing of the global warming process in the coming decades is not robust among the models, which affects our ability to develop sound environmental policy. Using simple physical ideas, this talk will aim to shed light on why models disagree in their climate response to greenhouse warming; on recent progress and remaining challenges in this area; and on connections to atmosphere-ocean circulation and to Arctic change.

Physics students (2nd year and up) are invited to pizza lunch with the speaker:
12pm, C2039

ALL ARE WELCOME!!!