



Climate and Energy Decision Making

Sponsored Seminar

Dr. Mort Webster

Assistant Professor of Engineering Systems, MIT

Presenting on:

“An Approximate Dynamic Programming Framework for
Global Climate Decisions Under Uncertainty”

April 17, 2012

12 noon

(Lunch served at 11:50 am)



129 Baker Conference Room
Department of Engineering and Public Policy

Seminar Abstract: Uncertainties economics, technological change, and in the physical earth system present a challenge to formulating a policy response to climate change. Decisions about the portfolio of responses -mitigation, adaptation, R&D into advanced technologies, etc. - must be made in the near term with assumption that future decisions will adapt to new information as it is received. In this talk, I present an approximate dynamic programming framework for integrated assessment modeling to solve for sequential decision under uncertainty. As a demonstration, I apply this framework to climate decision in the presence of uncertain technological change. I will also outline ongoing work to extend this model to fully endogenize learning about climate sensitivity in sequential decision model using a partially observable Markov decision framework.

Speaker Bio: Prof. Webster is an Assistant Professor of Engineering Systems, with a focus on energy and environmental systems. Prof. Webster specializes in risk analysis, uncertainty analysis, and decision-making under uncertainty. Current research projects include stochastic dynamic modeling of the electric power system focusing on the integration of intermittent renewable generation, risk tradeoffs in long-term climate targets, modeling technological change as a stochastic process, evaluation of cost-containment provisions for climate policy under uncertainty, and integrated economic/energy/chemistry modeling for regional air quality policy design. Prof. Webster is active in several research centers at MIT, including the Center for Energy and Environmental Policy Research (CEEPR), the Joint Program on the Science and Policy of Global Change, and the MIT Energy Initiative. He received a Ph.D. (2000) in Engineering Systems and a M.S. (1996) in Technology and Policy from MIT.

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