



Institute Lecture

Global Warming: Science, Politics, Ethics and Policy

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Tuesday, 14th February 2012; Time: 5:00 PM, Venue: L-1, Lecture Hall Complex

Abstract

Application of the mathematical laws of physics to the prediction of weather, climate, and climate change is considered to be one of the major scientific advances of the 20th century. Deterministic prediction of day-to-day weather fluctuations is now routinely done utilizing complex models and supercomputers. Several research and operational efforts are underway to predict seasonal and inter-annual variations of climate system beyond the deterministic range, and the impact of human activities on climate change.

This presentation has three parts. The first part will review our current understanding of the mechanisms for weather and climate variations, and show some evidence for predictability in the midst of chaos. The second part will show comprehensive evidence from observations and models presented by the Inter-governmental Panel on Climate Change that global warming is real and caused by human activities. The third part will examine the role of science and politics in ethical choices and policy options for adaptation to, and mitigation of, the impacts of climate change. Uncertainty in predicting changes in the Indian monsoon in a changing climate, and India's contributions to greenhouse gas emissions will also be described.

About the speaker

Prof. Jagadish Shukla was one of the Lead Authors of the 2007 report of the Inter-governmental Panel on Climate Change (IPCC) which shared the 2007 Nobel Peace Prize with Vice President Gore.

In 2007, he received the International Meteorological Organization (IMO) Prize, considered to be the highest prize in the world of meteorology. In 2009, he was elected to be a Fellow of the American Geophysical Union. In 2005, he received the Rossby Medal; in 2001, he received the Walker Gold Medal; in 1982 he received the Exceptional Scientific Achievement Medal of NASA. He was appointed by the Governor of Virginia as a member of the Commission on Climate Change.

Prof. Shukla has made contributions to the science of meteorology and to the global society through fundamental scientific advances, institution building, and international cooperation in meteorology for the betterment of humankind worldwide. He has made significant contributions to the understanding of the predictability of weather and climate including the Asian monsoon dynamics, deforestation and climate change. His research has established that there is predictability in the midst of chaos and that there is a scientific basis for short-term climate prediction.

Prof. Shukla is a Fellow of the American Geophysical Union, the American Meteorology Society, India Meteorology Society and an Associate Fellow of TWAS (the academy of sciences for the developing world). He is the Author/co-author of 200 scientific papers and the Editor/contributor of four books. He has been the Ph. D. thesis adviser for about 20 students at M.I.T., Univ. of Maryland, and GMU. He was instrumental in establishing research centers in India and Italy. He has served as the Chair/member of about 50 national/international panels and committees. In 2008, he was the Chairman of the World Modelling Summit for Climate Prediction.

Prof. Shukla founded Gandhi College for education of rural women in the village of his birth in India.

Recently, Prof. Shukla has been conferred with Padmashree by the Government of India.

Tea at 4.45 PM

All interested are welcome.

A. K. Chaturvedi
Dean of Research and Development
IIT Kanpur