

## **Economics Seminar, Indian Statistical Institute, New Delhi.**

**SPEAKER:** Anant Sudarshan, Harvard University.

**TITLE:** **The Economic Impacts of Temperature on Industrial Productivity: Evidence from Indian Manufacturing.**

**TIME:** 11:30 AM - 01:00 PM

**DAY & DATE:** Friday, 24<sup>th</sup> January, 2014.

**PLACE:** Seminar Room 2

### **Abstract:**

Understanding the economic impact of changes in surface temperatures is of critical importance in climate and development policy. This paper suggests that surface temperatures might broadly influence economic output through their impact on worker productivity. We provide empirical evidence in support of this hypothesis in the context of manufacturing sector output in India. We exploit a national level dataset of individual manufacturing plants in India to show that (i) plant level manufacturing output responds negatively to high temperatures; (ii) the magnitude of losses is economically significant (of the order of 2 percent of daily output per degree celcius); (iii) output response is non-linear in temperature and primarily associated with high temperature days and (iv) temperature response is greatest in plants where the worker value-added is high. This pattern agrees with the physiological response of human beings to temperature documented from heat stress studies in the lab. We strengthen our conclusions by also directly collecting daily worker productivity measures from selected case study sites. Our results suggest that integrated assessment models may underestimate the global economic costs of climate change by neglecting to account for reduced worker productivity during high temperatures.

JEL: Q54, Q56

<http://www.isid.ac.in/~pu/seminar.html>