Economics Seminar, Indian Statistical Institute, New Delhi.

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TITLE: **A new concept of equilibrium in games with distorted information.**

TIME: 03:30 PM - 5:00 PM.

DAY & DATE: Monday , 14th January, 2013

PLACE: Seminar Room 2

Abstract:

I'm going to talk about belief distorted Nash equilibrium { a new concept of equilibrium which can be applicable in discrete time dynamic games in which players have imperfect, incomplete or even distorted information about the game they play.

In the games considered players, besides their own decisions, can observe also two kinds of global variables influencing their payoffs: a statistic function of choices of decisions of all the players (like e.g. market price in a market model or aggregate extraction in a resource extraction game) and a global state variable changing in response to this statistic (like e.g. amount of the resource left).

We can also take into account private state variables of players, not observable by the others (like e.g. amount of money possessed).

At each stage of the game players know past values of the statistic and the global state variable, as well as current value of the state variable, and form some expectations about future values of those two global variables based on their observations and best respond to their expectations. Expectations may have various forms: either they are probability distribution of future scenarios as a result of history and player's choice of decision or they constitute sets of scenarios regarded as possible. A general model is built, encompassing both games with finitely many players as well as games with infinitely many players, since this concept of equilibrium is especially suitable for games with many player.

The concept of pre-belief-distorted Nash equilibrium (pre-BDNE) in which players best respond to their observations, belief-distorted Nash equilibrium (BDNE) being a pre-BDNE at which the beliefs cannot be falsified during the play and various concepts of self-verification of beliefs are introduced.

Relation of the new concepts to Nash equilibria and subjective equilibria are examined and illustrative examples are presented.

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