



**K.R. MANGALAM UNIVERSITY**  
THE COMPLETE WORLD OF EDUCATION

### Report

**Date:** Tuesday, 13 December 2022

**Venue:** Online, MS Team

**Event type:** Webinar

**Mode of activity:** Online

**Target Group:** UG and PG students of SBAS

**Resource person:** Dr. Sunil Kumar, Department of Physics, Ramjas College, University of Delhi - 110007

**Event Coordinators:** Dr. Neeraj Kumari and Dr Pawan Kumar

**Organized by:** School of Basic and Applied Sciences

School of Basic and Applied Sciences organized a guest lecture on “Complexity and Data Science Approach to Study Fragility in Financial Market” in online mode. The stock market is well known example of a complex system where interacting agents lead to joint evolution of stock returns and the collective market behavior exhibits emergent properties. However, it is challenging task to quantify complexity in stock market data. Therefore, the main objective of the webinar was to aware the participants about the financial market and its complexity.

The webinar was started by Dr Neeraj Kumari, event coordinator where she welcomed all the participants and gave a brief introduction about the webinar and resource person. Professor Sunil started his talk from complex system which are associated with nature, society and infrastructure. As society is divided into different components like financial market, friendship and collaboration. The financial market is the creation of human civilization. He told that financial market are man made complex system which consists of investors. The data found in the stock market is useless until it transformed into useful

information. The hidden information can be extracted by using various systems like data science, statistical mechanics, non-linear dynamics and complex network theory.

Dr Sunil emphasized on different steps used for filtration of stock market data. He also discussed about different theories used in the financial market. Random Matrix Theory which was successfully developed by E Wigner in 1951 and now a days, used in financial market on a large scale. He also highlighted network centric measures used in the financial market data analysis. He discussed about the important events in stock markets like Black Monday, Tsunami/ Fukushima Lost Decade and many more.

It was a nice session where participants became acquainted with financial market and its complex system. In the last participants asked about their queries. Dr Neeraj Kumari gave vote of thanks and expressed her gratitude to the resource person and participants.

### Glimpses of the event

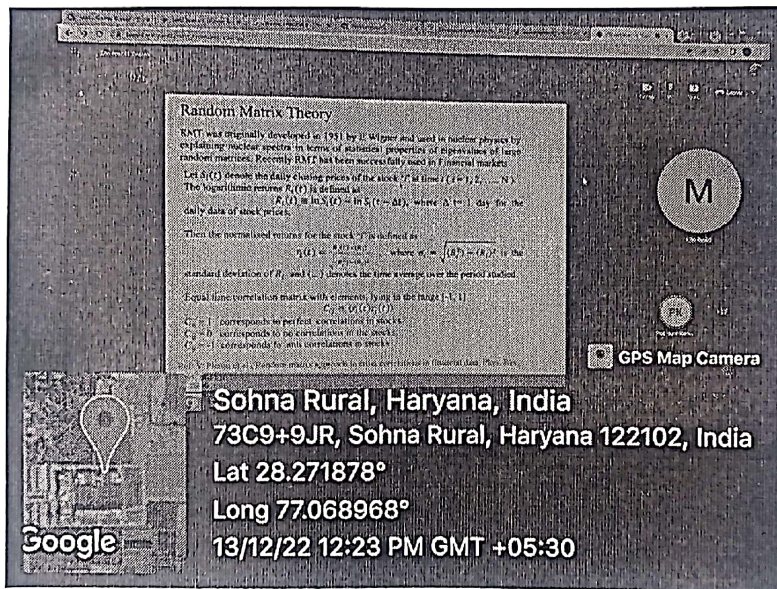


Photo 1: Experts discussing about the Random Matrix Theory

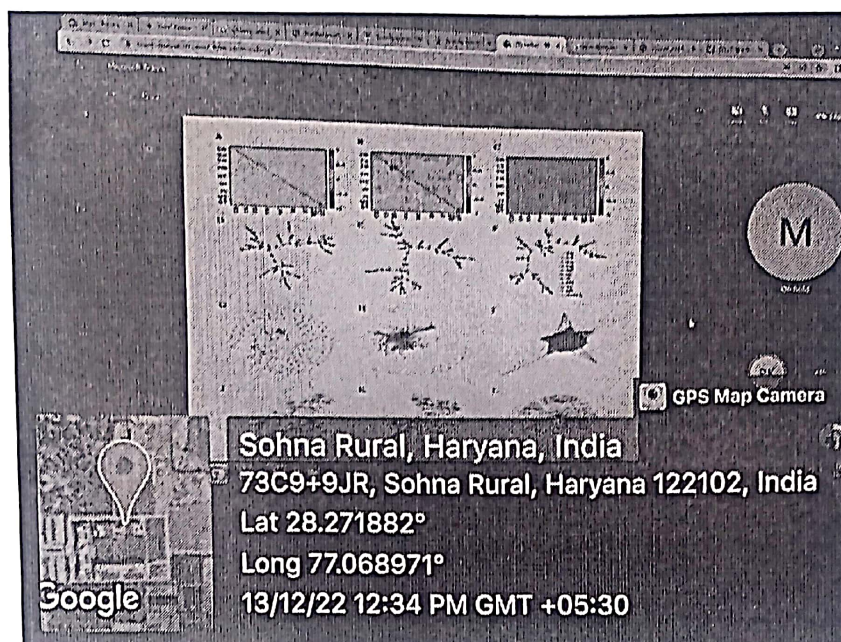


Photo 2: Expert trying to explain about the financial market

Report Prepared by	Dr Neeraj Kumari and Dr Pawan Kumar  <i>Neeraj</i>  13.12.2022
Report Verified by Event Coordinator	Dr Neeraj Kumari  <i>Neeraj</i>  13.12.2022
Report Seen by Dean	Dr Meena Bhandari  <i>Meena</i>  13.12.2022



Complexity and data science approach to study fragility in financial market

Date: 13<sup>th</sup> December 2022

Venue: Online

School of Basic and Applied Sciences

Sr. No.	Student Name
1	Neeraj Kumari
2	Meena Bhandari
3	Rajni Gautam
4	Ruby Jindal
5	Dr. Mina Yadav
6	Jeetika
7	Abhay Berwal
8	Seema Raj
9	Pooja Vats
10	Ms. Ritika Khatri
11	Amit Aggarwal
12	Chandan
13	Prof. Sunil Kumar (DU) (Guest)
14	Anjali
15	Pawan Kumar
16	MUSKAN
17	NEHA
18	MADHURI RAJPOOT
19	Meghna (Guest)

Verified by:

Signature:

Date:

*Neeraj*  
13/12/22

*Meena*  
13/12/22