


**Prof. V. Sree Hari Rao, FSRTI, Hyderabad** delivered a talk on “**Mathematical thought process of real world – opportunities for Mathematicians**” on **15<sup>th</sup> January, 2021** via online-mode.

**αξίωμα**

**GUEST LECTURES**

**Prof V Sree Hari Rao**  
FSRTI, Hyderabad

**MATHEMATICAL  
THOUGHT PROCESS** OF  
**REAL WORLD -**  
OPPORTUNITIES FOR MATHEMATICIANS

 **15th JANUARY, 2021**  
at 11:30 am on  
[meet.google.com/mfy-vpyr-kux](https://meet.google.com/mfy-vpyr-kux)

**Prof. Hadi Susanto**, *University of Essex, UK and Khalifa University, UAE* has delivered a talk on “**Patterns and Pattern formation**” on **January 29, 2021** via online-mode.



**axiom**  
Mathematics Dept.  
BITS-Pilani, Hyderabad Campus

**GUEST LECTURES**

# **PATTERNS AND PATTERN FORMATION**

**PROF. HADI SUSANTO**

*University of Essex, UK and Khalifa University, UAE*

Pattern formation is the developmental process of visible, orderly outcomes of self-organization, i.e., patterns. Patterns are ubiquitous in nature and their formation is a frequent phenomenon in physics, chemistry, biology, and materials science. This talk will provide an overview of pattern formation. We will review early models exhibiting the phenomenon and their relevance, particularly in biology. If time permits, we will also discuss how patterns can appear through the process of multiple hystereses of localized solutions that form a 'snaking' existence curve in the parameter space, known as a homoclinic snaking, that has been widely observed in numerous natural applications.


**JAN 29  
3.00 PM**

Google meet:  
gma-fmen-eqo


**DIVYANI  
7985622625**



**Prof. Sanjeev Kumar, Institute of Basic Sciences, Agra** has delivered a talk on **“Fuzzy sets, fuzzy logic theory, and its applications”** on **February 12, 2021** via online-mode.




**BITS Pilani**  
Hyderabad Campus



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## **FUZZY SETS, FUZZY LOGIC THEORY, AND ITS APPLICATIONS**

The past few years have witnessed a rapid growth in the number and variety of applications of fuzzy logic (FL). FL techniques have been used in image understanding applications such as detection of edges, feature extraction, classification, and clustering. Fuzzy logic poses the ability to mimic the human mind to effectively employ modes of reasoning that are approximate rather than exact. FL can model nonlinear functions of arbitrary complexity to a desired degree of accuracy. FL is a convenient way to map an input space to an output space. FL is one of the tools used to model a multi-input, multi-output system.

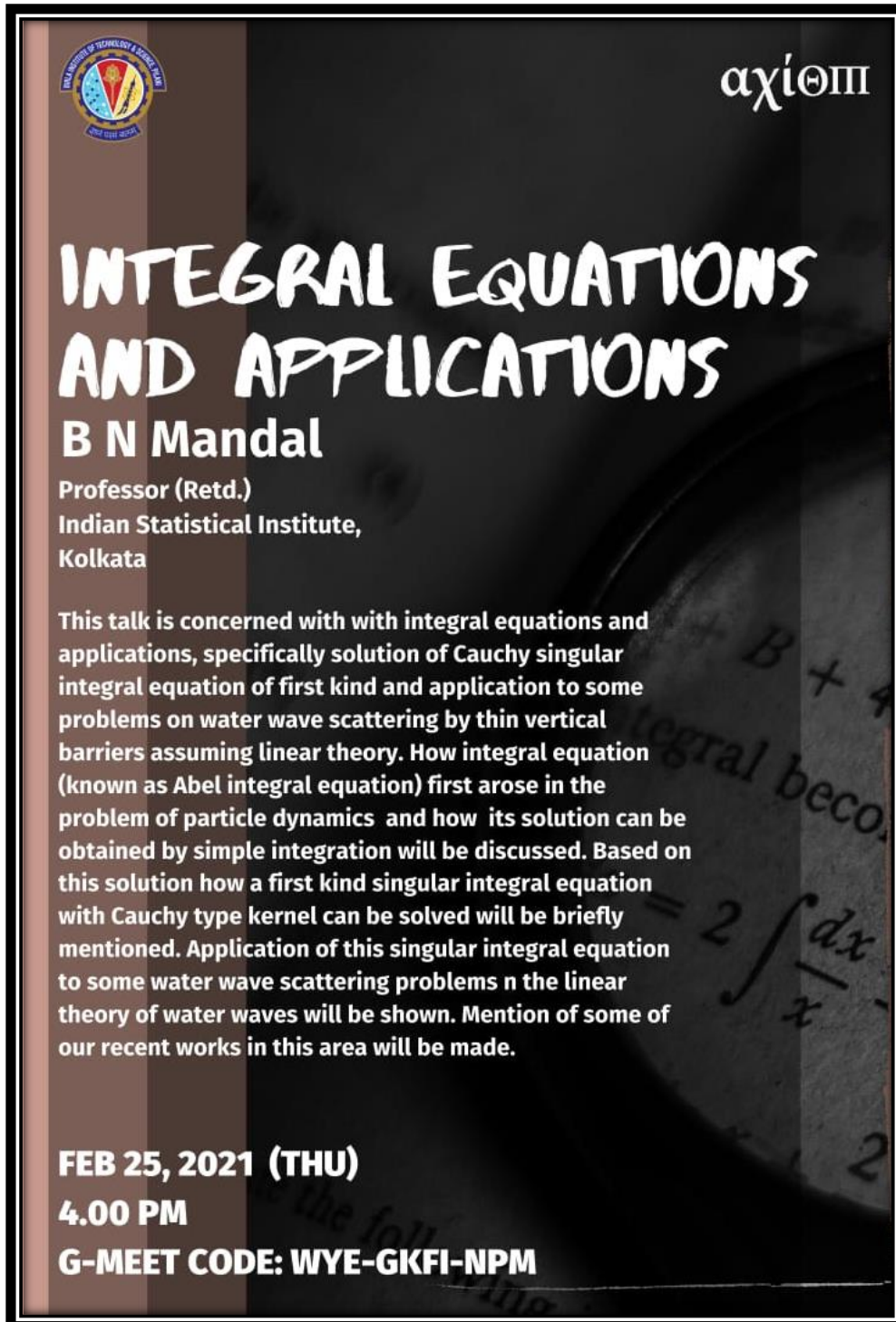



**PROF. SANJEEV KUMAR**  
Institute of Basic Sciences, Agra

**FEBRUARY 12, 2021**  
3:00 PM · GOOGLE MEET: FIU-HWPU-HQH

**DIVYANI**  
7985622625

**Prof. B. N. Mandal, Professor (Retd.), ISI, Kolkata, has delivered a talk on “Integral Equations and Applications” on February 25, 2021 via online-mode.**



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# INTEGRAL EQUATIONS AND APPLICATIONS

**B N Mandal**  
Professor (Retd.)  
Indian Statistical Institute,  
Kolkata

This talk is concerned with with integral equations and applications, specifically solution of Cauchy singular integral equation of first kind and application to some problems on water wave scattering by thin vertical barriers assuming linear theory. How integral equation (known as Abel integral equation) first arose in the problem of particle dynamics and how its solution can be obtained by simple integration will be discussed. Based on this solution how a first kind singular integral equation with Cauchy type kernel can be solved will be briefly mentioned. Application of this singular integral equation to some water wave scattering problems n the linear theory of water waves will be shown. Mention of some of our recent works in this area will be made.

**FEB 25, 2021 (THU)**  
**4.00 PM**  
**G-MEET CODE: WYE-GKFI-NPM**