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Departmental Seminar

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Seminar Title	: A STUDY ON SENSITIVITY AND STABILITY ANALYSIS OF NON-STATIONARY $\alpha$ -FRACTAL FUNCTIONS
Speaker	: Anarul Islam Mondal
Supervisor	: Prof. Sangita Jha
Venue	: Seminar Room (Department of Mathematics)
Date and Time	: 25 Oct 2024 (11:15 am)
Abstract	: This article presents a comprehensive investigation of fractal interpolation functions associated with a sequence of iterated function systems (IFSs). By selecting a suitable sequence of IFS parameters, the resulting non-stationary fractal function becomes a better approximant for the non-smooth function. To achieve this, we first construct the non-stationary interpolant within the Lipschitz space and examine key topological properties of the associated non-linear fractal operator. Furthermore, we explore the stability of the interpolant under small perturbations and analyze the sensitivity to perturbations in the IFS parameters. We provide an upper bound for the errors encountered during the approximation process. Finally, we study the continuous dependence of the proposed interpolant on various IFS parameters.