FROM SIMPLE RULES TO WILD UNIVERSES: THE COMMON GEOMETRY OF CHAOS

What connects planetary motion, weather unpredictability, and the geometric beauty of fractals? The answer lies in dynamical systems–the study of how systems evolve over time under physical or mathematical rules. In this talk, we embark on a visual journey through complex dynamics and chaos. We explore how simple operations–from finding polynomial roots via Newton's method to reflecting across geometric boundaries–give rise to rich fractal landscapes like the Mandelbrot and Julia sets. Finally, we will highlight how modern mathematics bridges the gap between two seemingly distinct mathematical worlds: repeated applications of algebraic functions and iterated reflections in circular mirrors.

By fusing these different rules into a common "hybrid" dynamical system, we unlock new insights into realalgebraic geometry, statistical physics, and universal fractal sets.

THURSDAY
SEPT 17, 2026

3:15 PM - 4:15 PM

Platinum Jubilee Auditorium (PJA)
Indian Statistical Institute,
Bangalore Centre

RSVP

Refreshments will be served after the talk.

About the Speaker

Sabyasachi Mukherjee is the winner of the Infosys Prize 2025 in Mathematical Sciences. He was awarded for his powerful and original work linking two distinct areas: the dynamics of Kleinian group actions and the iteration of holomorphic and anti-holomorphic maps in complex dynamics. His results have reshaped our understanding of conformal dynamics. **Read more**

Co-Host

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INFOSYS PRIZE

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