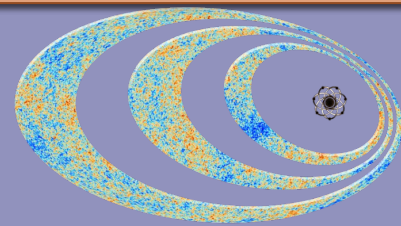
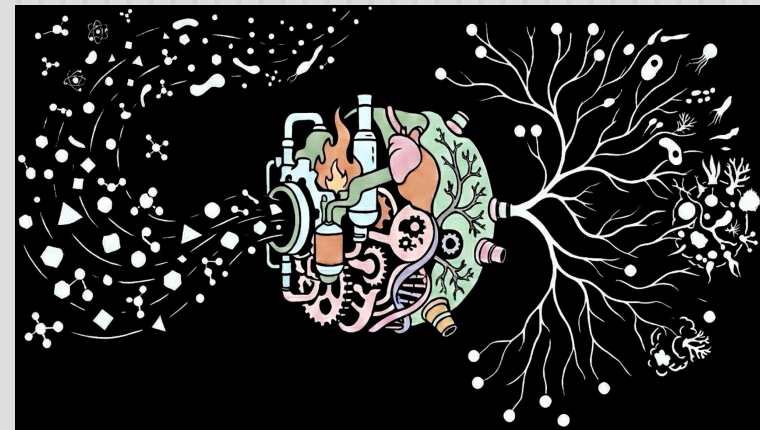


THE BRAHMAGUPTA PHYSICS COLLOQUIUM



Towards a physics of life, from metabolism to replication

Shashi Thutupalli, NCBS, Bangalore



Feynman, in his Lectures on Physics, describes how "physicists always have a habit of taking the simplest example of any phenomenon and calling it 'physics,' leaving the more complicated examples to become the concern of other fields." What, then, is the physics of life? And given the complexity, where do we even begin?

In this talk, I argue that metabolism, the very engine of life, offers a way in. I will start by describing our experiments deconstructing the metabolism of simple organisms, and conclude with recent work suggesting that protometabolic activity itself can emerge spontaneously from remarkably simple chemical ingredients. These chemical transformations might well be initial steps to the origins of not only metabolic but also life-like replication dynamics themselves.

Shashi Thutupalli earned his Ph.D. in Physics at the Max Planck Institute for Dynamics and Self-Organization, Germany. He later joined Princeton University as an HFSP Cross Disciplinary Fellow. He is currently an associate professor at the Centre for Living Machines, NCBS-TIFR (Tata Institute of Fundamental Research) and ICTS-TIFR (International Centre for Theoretical Sciences). Shashi has been at the National Centre for Biological Sciences, TIFR Bangalore since 2016, where he heads an interdisciplinary group looking at the origins and organization of living systems.



Venue: HSB 209 (PH Seminar Hall)

Wednesday Sep 02nd, 2026

Time: 4:30 - 5:30 PM

Cake at 4:15 PM



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