



Theoretical Statistics and Mathematics Unit

Indian Statistical Institute

203 B.T. Road, Kolkata - 700108

SEMINAR

Date: July 17, 2026

Time: 04:15 PM

VENUE:

L-Infinity, 5th Floor, A.N. Kolmogorov Bhavan, ISI Kolkata

SPEAKER:

Rukmini Dey

ICTS Bengaluru

TITLE:

ZMC and CMC surfaces— questions old and new

ABSTRACT:

We talk about Zero Mean Curvature (ZMC) and Constant Mean Curvature (CMC) surfaces in Euclidean and Lorentzian 3-spaces and address some old and new questions. We will not give proofs but explain the questions and the ideas behind the solutions. First question we address is that, given two curves sufficiently close, is there a ZMC or CMC surface interpolating them? (a version of the Plateau's problem). This is solved using the Bjorling-Schwarz problem and the Inverse Function Theorem in Banach spaces. Next, we address that, given ZMC surfaces arranged in an array in a plane, is there a ZMC surface whose height function is given by addition of the height functions of these ZMC surfaces? This is solved by a method which uses some Euler-Ramanujan identities. Finally we address the question of algebraicity of CMC surfaces of revolution. This is solved by establishing a connection between CMC surfaces of revolution and elliptic curves.

ALL ARE CORDIALLY INVITED

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