

Seminar Announcement

Speaker: Dr. Jaikrishnan Janardhanan.

Affiliation: Department of Mathematics,
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Timings: First Lecture: 25th June, 3:30 -- 5pm.
Second Lecture: 29th June, 4pm -- 5:30pm.
Third Lecture: 1st July, 3:30 -- 5pm.

Venue: SETS Auditorium, ISI-Chennai.

Title: The Jordan--Schoenflies Theorem and Applications

Abstract: This will be a couple of expository talks for the summer students at ISI-Chennai. The famous Jordan curve theorem states that every simple closed curve in the plane separates the plane into two components: a bounded "interior" component and an unbounded "exterior" component. Though this theorem seems intuitively obvious at first sight, there are subtle topological issues. We shall first prove this theorem using only rudimentary graph theory. We shall then present Schoenflies's generalization of the Jordan curve theorem that says that the two components determined by a simple closed curve are in fact homeomorphic to the interior and exterior of the unit-circle.

We will present some applications of the Jordan--Schoenflies to the classification surfaces. We will prove that every surface admits a triangulation which is a key step in the classification of surfaces.