



National Center for Mathematics

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Advanced Training in Mathematics Schools

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(Supported by National Board for Higher Mathematics)



Advanced Instructional School on Algorithmic Graph Theory

Department of Computer Science & Engineering, IIT Indore

June 26 to July 15, 2023

Graph Theory is a fundamental branch of mathematics. Many practical problems related to real-world networks, such as social, transportation, computer, and communication networks, require a deeper understanding of graphs. One of the main focuses of Graph Theory is to find efficient algorithms for solving computationally difficult graph problems. Through this AIS, participants will be exposed to structural, algorithmic, algebraic, extremal, and spectral approaches to studying graphs, focusing on both the theory and the algorithm design.

The lectures are meant for an audience of **research scholars, postdocs, teachers, and scientists** who are interested in both the mathematical and algorithmic aspects of Graph Theory.

ORGANIZERS



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SPEAKERS/LECTURES



**Hardness
of graph
problems**

Ranveer Singh,
IIT Indore



**Matching
Theory**

Nishad Kothari,
IIT Madras



**Network
flow
problems**

Saket Saurabh,
IMSc Chennai



**Method of
Hypergraph
Containers**

Rogers Mathew,
IIT Hyderabad



**Distance matrices
and their
algebraic
properties**

Krishnan Sivasubramanian,
IIT Bombay



**Bounds on
intractable graph
problems**

Ravindra B. Bapat,
ISI Delhi and Ashoka University



**Spectral Graph
Theory**

Rajesh Kannan,
IIT Hyderabad

GENERAL INFORMATION

Last date for receiving the online registration forms: **April 30, 2023**

Number of Participants:
45 (30 outstation and 15 local)

The list of selected applicants will be put up on the website one week after the last date of submission.

HOW TO APPLY

The web page of this program will be:
<https://www.atmschools.org/school/2023/AIS/agt>

Application form and other information about the program are available on the above website.