

ACADEMY OF DISCRETE MATHEMATICS AND APPLICATIONS

ADMA COLLOQUIUM LECTURE SERIES (ONLINE)

ABOUT ADMA

The Academy of Discrete Mathematics and Applications (ADMA) is a registered professional body functioning with the aim of promoting active and quality research in Discrete Mathematics and allied subjects. Established in 2005, it has been successfully disseminating front-line research culture among the discrete mathematicians in India.

FOURTH LECTURE

TITLE: FORBIDDING INDUCED SUBGRAPHS: STRUCTURE AND ALGORITHMS

SPEAKER: PROF. MARIA CHUDNOVSKY, PRINCETON UNIVERSITY, USA

Date: 31st August, 2024 (Saturday)

TIME: 07:00PM TO 08:00PM (IST)

Registration Link: <https://forms.gle/RbQ7wYgXrcVZYdAt5>

Registration deadline is 27th August, 2024 04:00pm (IST).

NOTE: E - certificate will be issued to only those participants who are members of ADMA. For membership see www.adma.co.in

ABOUT SPEAKER

Maria Chudnovsky received her Ph.D. in 2003 from Princeton University, USA under the guidance of Paul Seymour. She moved to Columbia University in 2006 and by 2014, was the Liu Family Professor of Industrial Engineering and OR at Columbia. In 2015, she returned to Princeton and is currently a Professor there. In 2004 she was named one of the 'Brilliant 10' by Popular Science Magazine. The work on the Strong Perfect Graph Theorem won her and her co-authors, Neil Robertson, Paul Seymour and Robin Thomas the 2009 Fulkerson Prize. In 2013 she was awarded the MacArthur grants. She was elected as a Fellow of the American Mathematical Society in the 2024 class of fellows.



Prof. Maria Chudnovsky
Princeton University, USA

FORBIDDING INDUCED SUBGRAPHS: STRUCTURE AND ALGORITHMS

Prof. Maria Chudnovsky,
Princeton University, USA

Abstract

Tree decompositions are a powerful tool in both structural graph theory and graph algorithms. Many hard problems become tractable if the input graph is known to have a tree decomposition of bounded “width”. Exhibiting a particular kind of a tree decomposition is also a useful way to describe the structure of a graph.

Tree decompositions have traditionally been used in the context of forbidden graph minors; studying them in connection with graph containment relations of more local flavor (such as induced subgraph or induced minors) is a relatively new research direction. In this talk we will discuss recent progress in this area, touching on both the classical notion of bounded tree-width, and concepts of more structural flavor.