

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.

FIFTH LECTURE

TITLE: APPLICATION OF COMBINATORIAL NULLSTELLENSATZ

Speaker: Prof. Xuding Zhu, Zhejiang Normal University, China

Date: 28th September, 2024 (Saturday)

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

Registration Link: <https://forms.gle/E5MRT2roZkAmsp6m7>

Registration deadline is 25th September, 2024 04:00pm (IST).

NOTE: E - certificate will be issued to only those participants who are members of ADMA.

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ABOUT SPEAKER

Xuding Zhu, received Ph.D. degree from The University of Calgary in 1991. Worked in Simon Fraser University and University of Bielefeld as postdoctoral fellow and in National Sun Yat-sen University, Taiwan. He is currently a Chair Professor at Zhejiang Normal University, China. His research interests are in graph colorings, especially in circular coloring, game coloring and list coloring of graphs. Published about 300 papers and is in the Editorial boards of Electronic Journal of combinatorics, SIAM Journal on Discrete Mathematics, Journal of Graph Theory, European Journal of Combinatorics, Discrete Mathematics etc.

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Prof. Xuding Zhu,
Zhejiang Normal University, China

Application of Combinatorial Nullstellensatz

Xuding Zhu

September 28, 2024

Abstract

The Combinatorial Nullstellensatz gives a sufficient condition for a polynomial $P(x_1, x_2, \dots, x_n) \in F[x_1, x_2, \dots, x_n]$ to have a non-zero point in a given grid $S_1 \times S_2 \times \dots \times S_n$, where each S_i is a finite subset of F . Many combinatorial problems can be stated as the existence of a non-zero point of a polynomial in a certain grid, and hence have the potential of applying Combinatorial Nullstellensatz. This talk explains some applications of Combinatorial Nullstellensatz to graph coloring and edge weighting problems.