

Webinar: Combinatorial applications of some topological theorems by Prof. Ravindra B. Bapat (ISI Delhi)

by Manjil Saikia - Tuesday, November 24, 2020

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Gonit Sora is organizing a webinar to be delivered by **Prof. Ravindra B. Bapat** of Indian Statistical Institute, Delhi. The details are given below.

Date: **28 November, 2020 (Saturday)**

Time: **4 pm IST**

Title: **Combinatorial applications of some topological theorems**

Abstract: The Brouwer's Fixed Point Theorem and the Borsuk-Ulam Theorem are important theorems in Topology with many applications. Brouwer's Fixed Point Theorem asserts that a continuous function from a compact convex set to itself has a fixed point. We will describe equivalent versions of the theorem including Sperner's lemma which is purely combinatorial. The Borsuk-Ulam Theorem states that any continuous function from the n -dimensional sphere to the n -dimensional euclidean space must map two antipodal points to the same point. Lovasz used the theorem to settle a long-standing conjecture about the chromatic number of a certain graph, called the Kneser graph. We will present this proof after introducing the necessary background.

About the Speaker: *Prof. Ravindra Bhalchandra Bapat is a well known mathematician, known for his work in matrix analysis, matrix inequalities, matrices in graphs, etc. He did his B.Sc. from the University of Mumbai, M.Stat. from the Indian Statistical Institute, New Delhi and Ph.D. from the University of Illinois at Chicago in 1981. After spending a year in the Northern Illinois University (USA) and two years in the Department of Statistics, University of Mumbai, Prof. Bapat joined the Indian Statistical Institute, New Delhi. He has authored more than 160 research papers and books in reputed journals. He has also been a member of the editorial board of several reputed journals, including the journal Linear and Multilinear Algebra. Prof. Bapat is a Fellow of the Indian Academy of Sciences, Bangalore and the*

Indian National Science Academy, Delhi, he was also the President of the Indian Mathematical Society during its centennial year 2007-2008, and was awarded a J. C. Bose fellowship in 2009.

The talk will be suitable for a general audience (college students are specially welcome), and will be held online via Zoom. It will also be livestreamed on our [Facebook page](#).

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e-Certificates will be issued to participants who attend the talk on Zoom.

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