IPM Biennial Conference on Combinatorics and Computing, May 20-22, 2025, School of Mathematics, IPM, Tehran 40 Years in Designs: Celebrating the Life and Achievments of Professor Gholamreza B. Khosrovshahi

Covering with Heavy Triangles: A Generalization of Delaunay's Theorem

Morteza Saghafian

Institute of Science and Technology, Austria

Delaunay triangulations are fundamental structures in computational geometry, with broad applications in both theoretical mathematics and practical fields.

In this talk, I will present a recent generalization of the classical result by Boris Delaunay that introduced these triangulations. Building on this framework, we derive new geometric proofs for several classical results, including the 3-colorability of even-degree triangulations, Fisk's theorem, Worpitzkys identity, and results related to k-facets.