

On the minimum number of non-monochromatic simplices for Sperner labelings of a regular triangulation

L.A. Calvo Pascual; S. Merchán Rubira; D. Raboso Paniagua; J. Rodrigo Hitos; J.M. Rodríguez García

Abstract-

Motivated by an open problem in the literature stated by Mirzakhani and Vondráček, we give a lower bound of the number of non-monochromatic simplices for Sperner labelings of the vertices of a triangulation of a given k -simplex with vertices of integer coordinates. This triangulation maximizes the number of simplices over all the triangulations of the k -simplex with vertices of integer coordinates.

Index Terms- Sperner labeling; Hypergraph labeling problem; Discrete Optimization.

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