South East Asian J. of Mathematics and Mathematical Sciences Vol. 19, Proceedings (2022), pp. 01-10

> ISSN (Online): 2582-0850 ISSN (Print): 0972-7752

## HYPERTREE: ITS TOPOLOGICAL PROPERTIES AND COMPARATIVE ANALYSIS

D. Antony Xavier, Eddith Sarah Varghese and Deepa Mathew\*

Department of Mathematics, Loyola College, Nungambakkam, Chennai - 600034, Tamil Nadu, INDIA

E-mail: dantonyxavierlc@gmail.com, eddithsv@gmail.com

\*Department of Mathematics, St. Joseph's College, Bangalore, Karnataka, INDIA

E-mail : deepamathew32@gmail.com

(Received: Apr. 20, 2022 Accepted: May 12, 2022 Published: Jun. 30, 2022)

## Special Issue Proceedings of International Virtual Conference on "Recent Trends in Applied Mathematics, ICRTAM - 2022"

Abstract: Hypertree of dimension t is a complete binary tree, where two vertices with a label difference of  $2^{i-2}$ ,  $1 \le i \le t$ , along the same level, are connected by a horizontal edge called, hyperedge. We have determined the distance based topological indices of Hypertree. Topological indices are the parameters to describe the physicochemical properties of chemical graphs. We have computed the analytical expressions for the distance based indices for Hypertree. Also, we have done a comparative study between Hypertree and complete binary tree.

**Keywords and Phrases:** Message traffic density, Szeged index, Mostar index, network throughput.

2020 Mathematics Subject Classification: 05C05, 05C12, 05C65, 05C92.