South East Asian J. of Mathematics and Mathematical Sciences
Vol. 21, No. 3 (2025), pp. 257-272

DOI: 10.56827/SEAJMMS.2025.2103.16 **ISSN (Online): 2582-0850**

ISSN (Print): 0972-7752

PARTITION DIMENSION OF EXTENDED ZERO DIVISOR GRAPHS

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(**Received:** *Aug. 04, 2025* **Accepted:** *Dec. 28, 2025* **Published:** *Dec. 30, 2025)*

Abstract: The ordered partition $\Pi = \{S_1, S_2, ..., S_k\}$ of the vertices of the connected graph G is a resolving partition, if for any vertex $x \in V$ with respect to the partition Π is the vector $\zeta(x|\Pi) = (d(x, S_1), d(x, S_2), ..., d(x, S_k))$ where $d(x, S_j), 1 \leq j \leq k$ represents the distance between the vertex x and the set S_j, is different for every pair of vertices and is denoted by $pd(G)$. The partition dimension is the minimum of k for which there is a resolving partition. In this paper, we investigate the partition dimension of the extended zero divisor graphs of certain finite commutative rings.

Keywords and Phrases: Partition dimension, Extended zero divisor graph, Ring of integers, Commutative ring.

2020 Mathematics Subject Classification: 13M05, 05C12, 13A70.

1. Introduction

The concept of resolvability and metric dimension was first introduced by Slater in [16]. The development of this concept lead to many application to the arrangement of the fewest possible loran/sonar detecting devices in a network to enable the unique representation of each vertex's position in relation to the devices in the