## **IJARSCT**



International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Impact Factor: 7.67

Volume 5, Issue 1, December 2025

## **B**[r] Stability Analysis of Uncertain Interval Discrete-Time Systems

Yeong-Jeu Sun<sup>1</sup>, Sheng-Wei Huang<sup>2</sup>, Cheng-Fu Huang<sup>3</sup>

Professor, Department of Electrical Engineering Student, Department of Electrical Engineering 2,3
I-Shou University, Kaohsiung, Taiwan

**Abstract:** This paper first defines the condition for achieving B[r] stability for a class of uncertain interval discrete-time systems. Next, we apply algebraic methods to derive a criterion guaranteeing B[r] stability for a class of uncertain interval discrete-time systems. Finally, we present several numerical simulation results to illustrate the application and correctness of the main theorem

**Keywords**: interval systems, B[r] stability, uncertain systems, discrete-time systems







