Department of Computer, Information Sciences, and Mathematics

University of San Carlos

MULTI-METHOD EXTENSION TO POLYNOMIAL APPROXIMATION USING NUMBER FIELD RING OF INTEGERS

Thesis Proposal Defense

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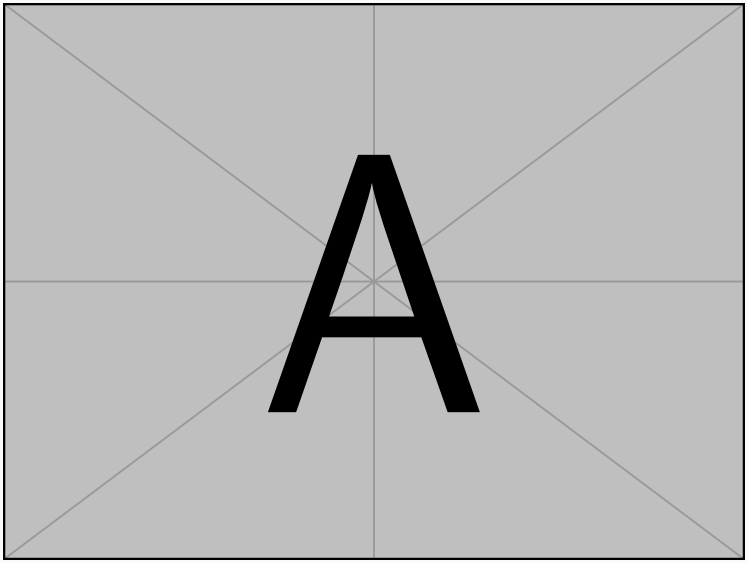
Theoretical Framework

Standard Figure Presentation



Comparative Analysis

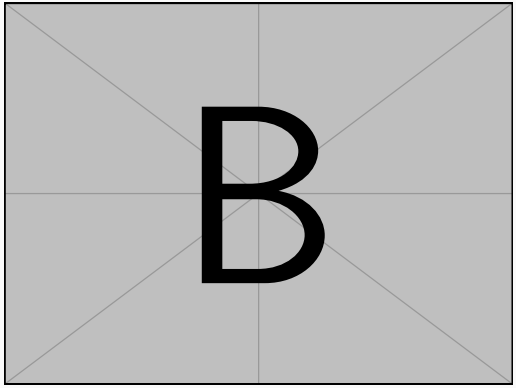


Figure 2: Method A Results

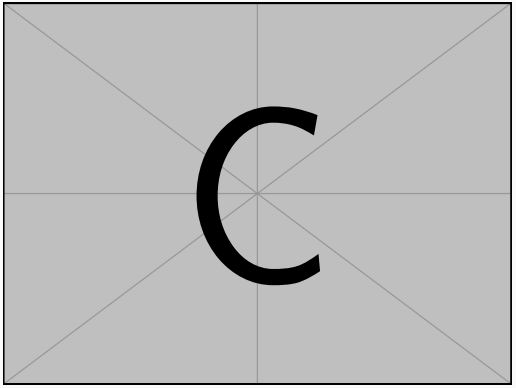


Figure 3: Method B Results

- Faster convergence

- Slower computation

Performance Metrics

Table 1: Comparison of Approximation Methods

Method	Iterations	Time (ms)	Error Rate
Standard Polynomial	150	45	1.2×10^{-3}
Number Field Ring	120	38	5.4×10^{-5}
Hybrid Extension	110	42	1.1×10^{-6}

Analysis: The table demonstrates that the *Hybrid Extension* provides the lowest error rate while maintaining competitive computational time.