

## Title Mathematical and Numerical Analysis of .....

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**Abstract.** The abstract should provide a brief summary of the main findings of the paper, such as: Based on a ... method and a ... method, a ... algorithm is designed to solve a ... problem in this paper. This ... problem is an ... problem with .... Usually, such a ... problem can be ... problem by using the ... methods. We use a ... technique to ..., which is really effective .... To overcome the difficulties ..., we .... By ..., this ... can be .... Moreover, we .... Our proposed algorithm is .... The results of numerical examples show the ..., while they ..... In addition, our .....

**AMS subject classifications:** xxxxx, xxxxx

**Key words:** keywords 1, keywords 2, keywords 3, keywords 4.

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Equations should be typewritten whenever possible and the number placed in parentheses at the right margin. Reference to equations should use the form "Eq. (2.1)" or simply "(2.1)." Superscripts and subscripts should be typed or handwritten clearly above and below the line, respectively. For example,

$$Ax = b. \tag{2.1}$$

In (2.1), we set

$$A = \begin{pmatrix} 2 & -1 & \cdots & 0 & 0 \\ -1 & 2 & \cdots & 0 & 0 \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ 0 & 0 & \cdots & 2 & -1 \\ 0 & 0 & \cdots & -1 & 2 \end{pmatrix}, \quad A \in R_{n \times n} \tag{2.2}$$

and

$$b = (1, \dots, 1)^T. \tag{2.3}$$

Table should has a minimum of two columns and two rows. Plan tables to fit the column width of the journals. Avoid a format that requires setting the table sideways. Do not insert tables in the manuscript as images. All tables are numbered and include a caption (definitive title) at the top. Each table must be cited as Table 1 in the text in numerical order.

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Table 1: Total average time (seconds) used for different preconditioned AA methods.

Methods	$n=5$	$n=50$	$n=500$
AA	0.0040	-	-
DiagJacobian preconditioner	0.0030	<b>0.0040</b>	<b>0.0909</b>
FullJacobian preconditioner	<b>0.0021</b>	0.0322	11.7176

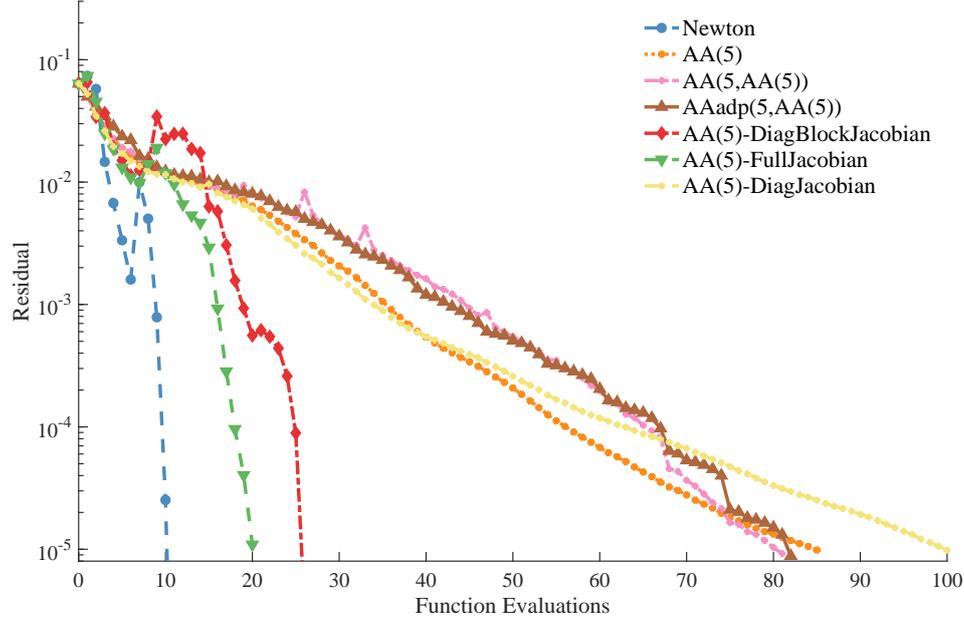


Figure 1: Performance comparisons between different solvers, including standard Newton's iteration, AA(5), AA(5) composite AA(5), adaptive AA(5) composite AA(5), preconditioned AA(5) with block-diagonal Jacobian preconditioner, AA(5) with diagonal Jacobian preconditioner, and AA(5) with full Jacobian preconditioner.

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## Conflicts of Interest

Declare conflicts of interest or state “The author(s) declare no conflict of interest.” Author(s) must identify and declare any personal circumstances or interest that may be perceived as inappropriately influencing the representation or interpretation of reported research results. Any role of the funders in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; or in the decision to publish the results must be declared in this section.

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