

## Sample $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{T}\mathcal{E}\mathcal{X}$ File for AIMS Journals

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(Communicated by Aim Sciences)

**ABSTRACT.** This fictitious paper is meant to serve only as the template for AIMS' journals: DCDS-A, DCDS-B, CPAA, JIMO, NHM, JMD, AMC, IPI and ERA-MS. Please read the instructions in the tex file very carefully. The sample file for MBE may be downloaded at <http://www.mbejournal.org/>.

**1. Introduction.** With the setting of the template, automatically the text is set in 10 point fonts, while the abstract and references are in 8 point fonts. All formulas and pictures must be within the limit of **5 inches** in width. An abstract is needed and not exceeding **200** words. Also needed are some **key words** and **AMS subject classifications**. Here are some important instructions on how to prepare your final  $\mathcal{T}\mathcal{E}\mathcal{X}$  files. Please pay special attention to the following:

1. All texts in a theorem, lemma, proposition, corollary, conjecture environment should be automatically *slanted*.
2. However all texts in a definition, remark, or notation environment should be automatically **normal**.
3. Please try to avoid defining your own macros.
4. Make sure all **lines**, **math formulas** and **figures** are **within the limit of 5 inches in width**. In particular, formulas can not run to the right of equation numbers. Never run out of the bound.
5. The following seven items all address the exact **reference style**. Please also follow very closely the reference samples at the end of this article.
  - i). List papers in alphabetic order according to first authors.
  - ii). Always place the first name (or first name initial) first, then the middle name initial (optional), followed by the last name. If there are multiple authors, use the word 'and' to connect the last two authors. See references [1], [2] and [3] for details.

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*2020 Mathematics Subject Classification.* Primary: 35C20, 35P20; Secondary: 93D15.  
*Key words and phrases.* Dimension theory, Poincaré recurrences, multifractal analysis.  
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iii). If a reference is a paper in a journal, the title of the paper should be *slanted*. Only the first character in a paper's title is in capital. When you list a paper from a journal, please ignore the issue number since the page numbers and volume number yield sufficient information to identify the paper. Finally, please pay attention to the correct way for **volume number** (in bold face), **year**, **starting page–ending page**. See references [2] and [3] for details.

iv). If the reference is a book, one should quote the title of the book, the first letter of each word should be capitalized. See reference [4] for details.

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**2. Examples in AIMS standards.** In this section, please pay attention to the style of the Definition, Proposition, Theorem, Proof and the alignments of the mathematics formulas:

**Definition 2.1.** The content of your definition. For example, A is call *standard* if it satisfies  $\dots$ .

**Proposition 2.2.** *The content of your proposition*

*Proof.* Assume that

$$\int_0^1 (|y_n|^2 + \gamma^2 |y_{nx}|^2) dx = 1,$$

then we find that

$$\begin{aligned} \theta_\varepsilon \wedge d\theta_\varepsilon^{n-1} &= (\theta_0 + \varepsilon\alpha) \wedge (d(\theta_0 + \varepsilon\alpha))^{n-1} \quad \text{since } d\alpha = 0 \\ &= (\theta_0 + \varepsilon\alpha) \wedge (d\theta_0)^{n-1} + \theta_0 \wedge d\theta_0^{n-1} - \varepsilon d(\alpha \wedge \theta_0 \wedge d\theta_0^{n-2}) \\ &\quad + \theta_0 \wedge d\theta_0^{n-1} + \varepsilon\alpha \wedge d\theta_0^{n-1} \\ &= \theta_0 \wedge d\theta_0^{n-1} - \varepsilon d(\alpha \wedge \theta_0 \wedge d\theta_0^{n-2}) \end{aligned} \tag{2.2}$$

Using (2.2) and Poincaré's inequality, we complete the proof.  $\square$

**Theorem 2.3.** *A has at least  $2n$  real eigenvalues if the following condition holds:*

$$\alpha^2 > n^2 \pi^2 \left( \gamma^2 + \frac{1}{\pi^2} \right). \tag{2.5}$$

*Proof.* We see that under the condition (2.5), the equations

$$\left( \gamma^2 + \frac{1}{\pi^2} \right) \lambda^2 + 2\alpha\lambda + k^2 \pi^2 = 0; \quad \gamma^2 \lambda^2 + 2\beta\lambda + (k-1)^2 \pi^2 = 0$$

admit negative roots  $\alpha_k^\pm$  and  $\beta_k^\pm$ . Therefore the theorem is proved.  $\square$

**Remark 1.** Please place the content of your remarks Here.



Fig. 1. Put the caption here

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1. Notice that all color graphics will be printed in black and white in the AIMS journals, **make sure that a black and white printout of your figure is legible.**

2. All figures should be placed in the body of your paper and before your Reference.

3. In a page with figures, there should be no unnecessary spare space. Be sure that a page should be fully occupied by figures and texts.

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5. Pictures should be in eps format and scalable.

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**Acknowledgments.** We would like to thank the referees very much for their valuable comments and suggestions.

#### REFERENCES

- [1] FirstNameInitial. MiddleInitial. LastName, Title of the paper, *Name of the journal*, **Volume** (Year), StartingPage–EndingPage.
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- [5] J. Serrin, Gradient estimates for solutions of nonlinear elliptic and parabolic equations, in *Contributions to Nonlinear Functional Analysis*, (eds. E. H. Zarantonello and Author 2), Academic Press, 1971, 33–75.
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