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ORIGINAL PAPER

Instructions to authors for use of the LaTeX template from the RBCA journal

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Abstract

The Abstract (250 words maximum) should be structured to include the following details: **Background**, the context, and purpose of the study; **Results**, the main findings; **Conclusions**, summary, and potential implications. Please minimize the use of abbreviations and do not cite references in the abstract.

Keywords: Keyword1; keyword 2; keyword 3 (Three to five keywords representing the main content of the article, in alphabetic order)

Resumo

O Resumo (com até 250 palavras) deverá ser estruturado para abordar os seguintes detalhes: **Background**, o contexto e propósito do estudo; **Resultados**, os principais encontrados; **Conclusões**, um breve resumo do trabaho e as implicações em potencial. Por favor, evite, na medida do possível, o uso de abreviaturas e não cite referências no resumo.

Palavras-Chave: Palavra-chave 1; palavra-chave 2; palavra-chave 3 (De três a cinco palavras-chave que representem os principais tópicos do artigo, em ordem alfabética)

1 Introduction to this Template

The Revista Brasileira de Computação Aplicada (RBCA) is an **open-access journal** linked to the Graduate Program in Applied Computing (PPGCA) of the University of Passo Fundo, Brazil. RBCA aims to provide to the scientific community article that presents an interdisciplinary perspective of the application of Computing in different areas of knowledge.

This document is the LaTeX template for RBCA journal manuscript submissions. Submissions that do not use the format available in this template will be automatically rejected.

Articles submitted to RBCA should be between 8 and 15 pages and will be published electronically. The languages accepted by RBCA are English (preferably) and Portuguese. We alert the authors that the preparation of the manuscript should be made carefully, both in its scientific content and in its grammatical correctness.

There are essential commands in the preamble that you will need to modify for your manuscript. Define the paper language ("english" or "brazilian") in `\documentclass` command and specify your manuscript's category with the `\papercat{...}` command. See the sample code in the preamble for a sample of how the title, author (names, orcid, affiliation, and e-mail) information can be specified. **If the paper is in Portuguese you need to inform the title in English using the `\titleother{...}` command.** Information about this edition of RBCA and publication details of the paper will be filled out by the RBCA's editor.

This template has been edited and validated in the

TexStudio© program and the Overleaf© Collaborative Writing and Publishing System. Any questions or problems regarding this template report to the RBCA e-mail (rbca@upf.br).

The remainder of this current section will provide some sample LaTeX code for various elements you may want to include in your manuscript.

2 Manuscript format rules and styles

2.1 Sectional Headings

You can use `\section{...}`, `\subsection{...}` commands to add more sections and subsections to your manuscript. Further sectional levels are provided by `\subsubsection` and `\paragraph`.

2.2 Citations and References

The RBCA use the `alpha-refs` document class option for authoryear citations using the `dcu` bibliography style from the Design Computing Unit of the University of Sydney, a variant of Harvard style. This class is defined in `RBCA_v2.0.cls` class file.

Use the `\citep` or `\cite` commands for citations in the format "(Authors; year)" or "Authors (year)", respectively. Some examples of citations are shown below:

- Book: Dongarra et al. (2003) and (Wickham and Grolemund, 2017);
- Book chapter: Hölbig et al. (2004);
- Article in journal: (Fernandes et al., 2017) and Resenes et al. (2019);
- Article in conferences proceedings: Hölbig et al. (2014);
- Online documents or websites: (Chang et al., 2019) and R Core Team (2019);
- Masters/Thesis: Nicolau (2018);
- Technical reports: (Hölbig and Krämer, 2003).

In your bib file **not use** `doi` and `url` fields. If the reference has DOI, use the `note` field to put the complete DOI address of this reference (e.g., bibitem `@article{Fernandes2017,...}` in the `references.bib` file). If the reference is online but does not have DOI, use the `note` field as follows: "Available at http://xxx.xxx" (e.g., bibitem `@Manual{R2019,...}` in the `references.bib` file).

For reference citations (using `\citep` or `\cite` commands), the citation should be linked to their respective reference, according to examples presented previously (task performed automatically by the RBCA LaTeX class).

2.2.1 This is a 3rd level heading

Use `\subsubsection` to get a 3rd level heading.

2.2.1.1 This is a 4th level heading.

Use `\paragraph` to get a 4th level heading. **Not use a 5th level heading in your manuscript**.

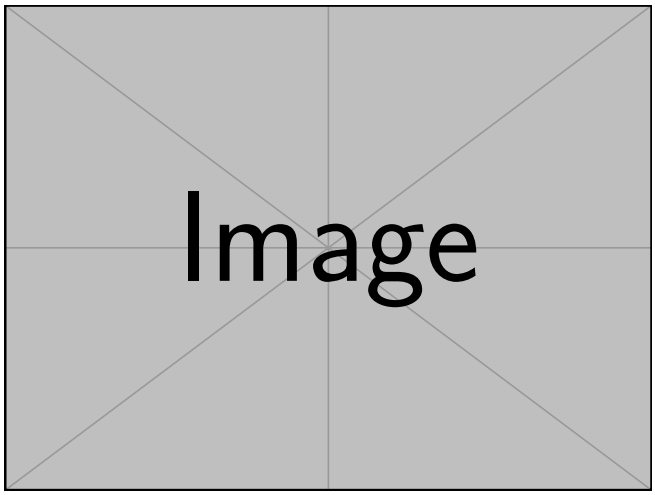

Figure 1: An example figure

2.3 Figures and Tables

Figures and tables are added with the usual `figure` and `table` environments, e.g., Figs. 1 and 2 and Table 1. Use `figure*` and `table*` if you need a two-column wide figure or table, as in Fig. 2 and Table 2. If your table has a note, you can use `threeparttable` and `tablenotes` environments, as in Table 1.

For the citation of figures, tables and equations use `\cref{}` command. Their numbers should be linked to their figures, tables, and equations (task performed automatically by the RBCA LaTeX class).

Table 1: Fonts and styles of the manuscript

Item	Font size	Font style
Title of paper	16 pt	bold
Authors	13 pt	bold
Institution	9 pt	–
Author e-mail	8 pt	–
PAPER CATEGORY	12 pt	bold
Text of Abstract/Resumo	9 pt	–
Text of paper	9 pt	–
Figure and Table caption	9 pt	–
1 Section	11 pt	bold
1.1 Subsection	10 pt	bold
1.1.1 3rd level	9 pt	bold
1.1.1.1 4rd level	9 pt	italic

This is a table note.
*Another note.

2.4 Formulas and equations

Equations and formulas should be placed on a new line, centralized and numbered consecutively for reference purposes, using the `equation` environment, as can be seen in Eqs. (1) and (2) or in Eq. (3).

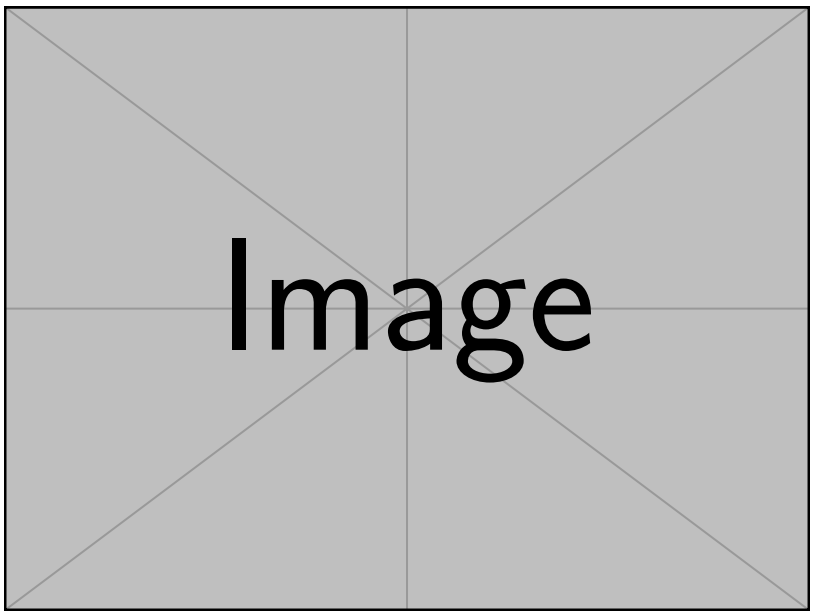

Figure 2: An example wide figure

Table 2: Matrix multiplication with *imatrix* data (adapted from (Hölbig and Krämer, 2003))

Program in:	Result/Matrix order	**128 × 128**	**256 × 256**	**512 × 512**	**1024 × 1024**
C-XSC	sequential	1.04666	5.11339	27.49690	204.10700
using long	8 processors	0.28522	1.17378	6.36642	45.96950
accumulator	speedup	3.66965	4.35634	4.31905	4.44005
C-XSC	sequential	0.63083	3.41555	21.16520	222.75400
with	8 processors	0.24378	1.16967	6.43267	43.80560
BLAS routines	speedup	2.58763	2.92009	3.29026	5.08505
C-XSC with	sequential	0.42283	1.69116	6.78124	31.38550
Dotk=1 and	8 processors	0.11418	0.44201	1.76142	8.72964
BLAS routines	speedup	3.70316	3.82604	3.84987	3.59527

$$\Delta T_{(ij)}(k) = T_{(ij)}(k) - T^*_{(ij)}(k) \tag{1}$$

$$T_{moc}(k) = T_{(ij)}(k) - \Delta T_{(ij)}(k) \tag{2}$$

$$BIAS = \frac{1}{M_{total}} \sum_{i=1}^{M_{total}} (T_i - T_i^*) \tag{3}$$

2.5 Program code listings

Program code listings should use the `lstlisting` package and are considered as figures. For reference purposes, we recommended that the lines of code be numbered. For example, the code of Fig. 3 shows a code in R language, where line 5 starts a function. The LaTeX code in the template shows how to set up a code listing. In the citation (using `\cref{}` command) of code listings, their number should be linked to their listing (task performed automatically by the RBCA LaTeX class).

```
1  require(doSNOW)
2  cl<-makeCluster(4) # number of cores
3  registerDoSNOW(cl)
4  # create a function check()
5  check <-function(n) {
6    for(i in 1:1000) {
7      sme <- matrix(rnorm(100), 10, 10)
8      solve(sme)
9    }
10 }
11 times <- 100      # times to run the loop
12 foreach(j=1:times ) %dopar% check(j)
13 stopCluster(cl)
```

Figure 3: Source code in R language using `lstlisting` package

2.6 Size, margins and footnotes of the manuscript

The page type used by RBCA is the "letter paper – letterpaper", with a size defined as 19cm × 28cm. The left margin has 2.5cm, and the right margin is 2cm. The top margin has 2cm, and the bottom margin is 2.5cm. In Table 1, we show the fonts and styles of the manuscript. Footnotes can be used throughout the text using `\footnote` [1] command . This formatting is performed automatically by the RBCA LaTeX class.

2.7 Abbreviations

The abbreviations used in the text are defined of this way: "word or text (abbreviation)".

3 Submission of manuscripts

Submission of the manuscripts should follow the guidelines presented on the RBCA website. The website describes the entire evaluation process of manuscripts submitted to the Journal.

Acknowledgments

The Acknowledgments section should be placed at the end of the manuscript, before the References section, without numbering.

References

Chang, W., Cheng, J., Allaire, J., Xie, Y. and McPherson, J. (2019). *shiny: Web Application Framework for R*. Available at https://CRAN.R-project.org/package=shiny.

Dongarra, J., Foster, I., Fox, G., Gropp, W., Kennedy, K., Torczon, L. and White, A. (eds) (2003). *Sourcebook of Parallel Computing*, Morgan Kaufmann Publishers Inc., San Francisco, CA, USA.

Fernandes, J. M. C., Nicolau, M., Pavan, W., Hölbig, C. A., Karrei, M., de Vargas, F., Bavaresco, J. L. B., Lazzaretti, A. T. and Tsukahara, R. Y. (2017). A weather-based model for predicting early season inoculum build-up and spike infection by the wheat blast pathogen, *Tropical Plant Pathology* **42**(3): 230–237. http://dx.doi.org/10.1007/s40858-017-0164-2.

Hölbig, C. A., Júnior, P. S. M., Alcalde, B. F. K. and Diverio, T. A. (2004). Selfverifying solvers for linear systems of equations in C-XSC, *in* R. Wyrzykowski, J. Dongarra, M. Paprzycki and J. Waśniewski (eds), *Parallel Processing and Applied Mathematics: 5th International Conference, PPAM 2003, Czestochowa, Poland, September 7-10, 2003. Revised Papers*, Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 292–297. http://dx.doi.org/10.1007/978-3-540-24669-5_38.

Hölbig, C. A., Pavan, W., Fernandes, J. M. C., Mazzonetto, A. and Zortea, T. (2014). An approach for encapsulating Fortran coded models into a R package, *in* D. Ames, N. Quinn and A. Rizzoli (eds), *Proceedings of the 7th International Congress on Environmental Modelling and Software*, IEMSS, San Diego, California, USA. Available at http://www.iemss.org/sites/iemss2014/papers/iemss2014_submission_146.pdf.

Hölbig, C. and Krämer, W. (2003). Selfverifing solvers for dense systems of linear equations realized in C-XSC, *Technical report, Preprint BUGHW-WRSWT 2003/1*, BUGH, Universität Wuppertal, Wuppertal, Germany. Available at http://www2.math.uni-wuppertal.de/~xsc/preprints/prep_03_1.pdf.

Nicolau, M. (2018). *Croptest : data-drive test automation for crop modeling systems*, Master in Applied Computing, Graduate Program in Applied Computing at University of Passo Fundo. Available at http://tede.upf.br/jspui/handle/tede/1531.

R Core Team (2019). *R: A Language and Environment for Statistical Computing*, R Foundation for Statistical Computing, Vienna, Austria. Available at https://www.R-project.org/.

Resenes, J. d. A., Pavan, W., Hölbig, C. A., Fernandes, J. M. C., Sheila, V., Porter, C. and Hoogenboom, G. (2019). jDSSAT: A javascript module for DSSAT-CSM integration, *SoftwareX* **10**: 100271. https://doi.org/10.1016/j.softx.2019.100271.

Wickham, H. and Grolemund, G. (2017). *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*, 1 edn, O'Reilly Media, Sebastopol, CA.

[1] Footnote example