Research Article (Manuscript type: Research Article, Review Article, Technical Note, etc.)

Title in English

*Title in Portuguese (if the article is in English, then here it will be in Portuguese)*

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**Abstract:** A single paragraph of about 200 words maximum. For research articles, abstracts should give a pertinent overview of the work. We strongly encourage authors to use the following style of structured abstracts, but without headings: (1) Background: Place the question addressed in a broad context and highlight the purpose of the study; (2) Methods: Describe briefly the main methods or treatments applied; (3) Results: Summarize the article's main findings; and (4) Conclusions: Indicate the main conclusions or interpretations. The abstract should be an objective representation of the article, it must not contain results, which are not presented and substantiated in the main text and should not exaggerate the main conclusions.

**Keywords:** keyword 1; keyword 2; keyword 3 (List from three to five pertinent keywords specific to the article; yet reasonably common within the subject discipline.)

**Resumo:** Um único parágrafo de até 200 palavras. Para artigos de pesquisa, os resumos devem dar uma visão geral pertinente do trabalho. Encorajamos fortemente os autores a utilizar o seguinte estilo de resumos estruturados, mas sem cabeçalhos: (1) Plano de fundo: Colocar a questão abordada em um contexto amplo e destacar o objetivo do estudo; (2) Métodos: Descrever brevemente os principais métodos ou tratamentos aplicados; (3) Resultados: Resumir os principais resultados do artigo; e (4) Conclusões: Indicar as principais conclusões ou interpretações. O resumo deve ser uma representação objetiva do artigo, não deve conter resultados que não sejam apresentados e fundamentados no texto principal e não deve exagerar as principais conclusões.

**Palavras-chave:** Palavra-chave 1; Palavra-chave 2; Palavra-chave 3 (Liste de três a cinco palavras-chave pertinentes específicas ao artigo; porém razoavelmente comuns dentro da disciplina do assunto.)

How to use this Template

This template details the sections of which can be used in an article. Notice that every section has its own correspondent style, which can be found under the “Style” menu of Word. The non-mandatory sections are listed as such. The given section titles are for “Research Articles”. The text should not exceed 8000 words. The review articles and other types of manuscripts have a more flexible structure.

Remove this paragraph and start numbering the sections with 1. For any questions, please contact the journal's editorial team.

1. Introduction

The introduction must briefly put the study under a wide context and highlight what is important. It must define the objective of the work and its meaning. The current state of the research field should be reviewed carefully, and **the major publications must be cited**. Please highlight controversial and divergent hypotheses when necessary. Finally, briefly mention the main objective of the paper. As far as possible, please keep the introduction understandable to scientists outside your particular field of research. References should be given at the end of the paper, in alphabetical order of the author's last name. See the end of the paper for more details on references.

2. Study Area (optional)

Regarding the item Study Area being separated from the Materials and Methods, it is important to highlight that it is not rigid. There are studies where the Study Area comes as an item after the Introduction and before the Materials and Methods, this is usually when the problem which the works aim to analyze is um function of a specific study area.

It is possible to show that when the methodology used can be replicated in different study areas, then this item can be in Materials and Methods, but if it is specific to one study area and to solve local issues, then it is better to have the study area as a separate item from the Materials and Methods section. In the Study Area, provide the delimitation and a brief description of the physical and geological characteristics of the area, enough to give a contextualization, but avoid detailed bibliographical research.

2. Materials and Methods

Materials and methods must be described with sufficient detail in order to allow other researchers to reproduce and build upon the published results. Please note that the publication of your article implies that you must make available to readers all materials, data, computer code, and protocols associated with the publication. Please disclose at the submission stage any restrictions on the availability of materials or information. New methods and protocols should be described in detail, while well-established methods can be briefly described and appropriately cited.

Research articles reporting large data sets that are stored in a publicly available database should specify where the data were stored.

3. Results

It must provide a concise and accurate description of the experimental results, their interpretation, as well as the experimental conclusions of which may be presented.

3.1. Subsection

3.1.1. Subsubsection

The dotted lines should look like this:

* First item
* Second item
* Third item

Numbered lists can be added, like this:

1. First item
2. Second item
3. Third item

The text continues here.

3.2. Figures e Tables

All of the figures and tables must be cited on the main text as Figure 1, Table 1, etc.

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**Figure 1.** This is a figure, If there are multiple panels, they must be listed as (a) Description of what contains in the first panel; (b) description of what contains in the second panel; The figures must be put in the main text, close to the first time they are cited. The figure description must be centered.

Figures and tables should be inserted in the body of the text and not at the end of the document as per previous submission rules. Figures with multiple panels should be placed in a single file before submission. Figures should have a resolution of 300 dpi and the \*.png extension is suggested to minimize loss of image quality. The width should be no less than 8 cm and no more than 18 cm. A caption should clarify all symbols used. Please use only one font family in your figures (for example, Palatino Linotype or Times New Roman).

For figures with maps and graphs, keep color blindness in mind and avoid the parallel use of green and red for example. For a list of color scales that are readable for a significant number of readers, please see the options for color combinations in ColorBrewer 2.0 (https://colorbrewer2.org/) using *colorblind safe* mode.

The tables cannot be sent as an image file. The tables must be self-explanatory and include a concise but sufficiently descriptive legend. Horizontal lines should normally appear only above and below the table, and as a separator between the head and main body of the table. Note that the word "Table" is never abbreviated and should be capitalized when followed by a number (e.g. Table 1).

**Table 1.** This is a table. The tables must be put in the main text, near the first time they are cited.

|  |  |  |
| --- | --- | --- |
| **Title 1** | **Title 2** | **Title 3** |
| Description 1 | Data | Data |
| Description 2 | data | data1 |

1 Tables could have footnotes.

3.3. Cartographic Guidelines

Maps, represented as figures in the text file, must be designed with care and attention to the page format, layout, data representation, symbolization, data classification, line thicknesses, use of color, and typography. Visual relationships should be designed to optimize readability, achieve appropriate visual hierarchy, establish clear relationships between figure and background, and, when necessary, represent visual contrast. When appropriate, maps should follow conventional symbolization schemes to aid interpretation (e.g., geologic symbols). To assist authors in preparing their maps, we have produced a guide to common errors.

If applicable, maps from maps suppliers such as Google Maps, Google Earth, or OpenStreetMap used in the papers must include the copyright and distribution license statements required from the map provider. The maps must conform to the individual redistribution permissions. The copyright and distribution licenses for such maps must be visible on the maps themselves. How a map should be represented in your article depends on how it was created. Sometimes a map needs no specification on the map itself, sometimes a credit must be given, and sometimes a full copyright statement is required. If the map itself already contains an explicit credit or copyright statement, nothing more should be done in the figure caption. But if nothing is stated on the map itself, the authors must decide whether they need to add a credit or copyright statement to the map itself. Here it is differentiated between five situations:

* **Materials created by the authors:** without a copyright statement and credit. Example: a digital elevation model (DEM) purely processed by the authors and derived from the use of a software
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* **Reuse of material from a maps supplier under public domain: sob domínio público:** none copyright statement is needed (once the copyright is dismissed) and credit is desirable (for example, IBGE, 2020)

3.3.1. General norms

Some general standards regarding maps are highlighted below:

* Authors names and affiliations CANNOT be included.
* A statement identifying the projection and grid reference system should normally be included
* The maps must be framed (use a 1 pt blank page border) within a suitable border and the position information (latitude / longitude or grid coordinates) visible
* The final map cannot be confusing or ambiguous in content. The names and descriptive notes must have a size and style relevant for the prominence and/or importance of the feature represented
* The adequate selection and positioning of the text are of extreme importance and not only will benefit the map user, but also the final map appearance. The poor or careless labeling of features can cause complications in map reading and negate the cartographic quality of the map
* Maps should contain the following basic elements: title, caption, direction, graphic scale, coordinate system (geographical or Cartesian)
* All the information fonts must be clearly identified
* The color must be applied thoughtfully, in order to increase readability and to improve the representation of variation in the data. The conventional use of color in map symbolization is encouraged

3.4. Samples location

The authors are responsible for supplying of adequate and detailed records over the provenance or location of samples or field points studied. Whenever possible, geographic coordinates for the locality should be added to the paper.

3.5. Formatting mathematical components

Symbols and mathematical equations must be in *italic*. To insert the equation, use the editor in Microsoft Word (equation), Cambria Math font in size 11pt. The equation must be centered in the page, a sequential numbering of the equation must be presented (in parentheses and along the right margin), as shown in Eq. (1). Equation callouts in the text should include the abbreviated name with a capital initial followed by the number in parentheses. To make the formatting easier, insert a table with 1 row and 2 columns: the first column insert the equation aligned to the center and in the second column move its divider to the right and write the sequential number of the equation aligned to the right. At the end, remove the table borders. For example:

|  |  |
| --- | --- |
|  | (1) |

the text coming right after the equation does not need to be in a new paragraph. Please punctuate the equations as a regular text.

3.6. Abbreviations and units of measure

Abbreviations must be avoided in the titles, depending on the lenght and of the familiarity of the abbreviation. They need to be defined in the abstract and then again, the first time they appear in the body of the manuscript. To avoid ambiguity problems, abbreviations that could have numerous meanings must be defined. This usually does not apply for well-known abbreviations such as INPE, IBGE, NASA, GPS, GIS, SRTM, which are better known than its long name. Note that most plural acronyms are followed by the suffix "s" (e.g. NGOs, DEMs), although there are some exceptions.

The SI (International System of Units) abbreviations does not need to be defined. Whenever convenient, present the units of measurement in the sequence of the header text and in parentheses - for example: Acceleration of gravity (mGal), Distance (m), Area (m2). The recommended abbreviations (but not obligatory) for ages are SI multipliers combined with "a”, such as for year: ka (a Thousand years, 103 years) and Ma (a million years, 106 years

The radiocarbon dating results are presented in years BP (before present), in which the “present” refer to the year 1950 AD. The calibrated dates must be presented in the form “years cal BP”. They could also be transformed into a Gregorian calendar. It is important to note that ages from optically stimulated luminescence (OSL) methods are not given in "BP years", due to the mathematical formulation of the method, only years or abbreviations such as ka (thousand years) are used, for example: OSL age (SAR protocol) of 7500 years, or, 7.5 ka.

4. Discussion

The authors must discuss the results and how they can be interpreted within the perspective of previous studies and the work’s hypothesis, highlighting the contributions of their work to the research field. The results and their implications must be discussed in the widest context possible, comparing it to similar results obtained from other researchers. Future research recommendations can also be highlighted.

5. Conclusions

This section is mandatory.

**Author’s contributions:** For articles with multiple authors, a small paragraph specifying their contributions must be provided. The following statements should be used "Conception, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal analysis, X.X.; research, X.X.; resources, X.X.; data preparation, X.X.; article writing, X.X.; revision, X.X.; supervision, X.X.; acquisition of funding, Y.Y. All authors have read and agreed with the published version of the manuscript”. Authorship should be limited to those who have substantially contributed to the work reported. Fill out only after acceptance for publication.

**Data linking**: The Revista Brasileira de Geomorfologia recommends that all articles containing relevant data—such as geomorphological mapping in geographic data format, georeferenced sample points, tables, programming codes, and others—make these datasets or samples available in an accessible and reproducible manner. Whenever possible, authors should submit their data to trusted repositories and link them to the manuscript using a DOI (Digital Object Identifier). Data can be stored in open-access platforms, such as: Zenodo (<https://zenodo.org/>), and Harvard Dataverse (<https://dataverse.harvard.edu/>). Authors should consult the guidelines of their chosen repository to ensure compliance with data sharing and preservation policies.

**Funding:** Please add: “This research has not received any external funding" or "This research was funded by FOUNDER'S NAME, grant number XXX". Please check carefully that the details provided are accurate and use the standard spelling of funding agency names at https://search.crossref.org/funding, any errors may affect your future funding. Fill out only after acceptance for publication.

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**References**

In the body of text, a citation follows the example models: Hugget (2007) for a single author; Arattano and Franzi (2003) for two authors; Bury, Sośnica and Zajdel (2019) for three authors; Novo et al. (2005) for more than 3 authors. The end of paragraph citations follow a similar structure, in any of the following examples (not simultaneous): (Hugget, 2007), (Arattano; Franzi, 2003), (Bury; Sośnica; Zajdel, 2019), (Novo et al., 2005). The separation between multiple references must be done by "semicolon" ( ; ), as shown in the example: (Hugget, 2003; Summerfield, 1991).

The references must be presented at the end of the paper, in alphabetical order from the last name of the author and listed individually at the end of the text. If more than one work is used, in the same year, by the same set of co-authors, a letter (a, b, c) is added to the year, both in the text citation and in the reference list. We recommend preparing references with a bibliography software package, such as EndNote, ReferenceManager, or Zotero, to avoid typos and duplicate references. Include the digital object identifier (DOI) for all references, when available.

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13. AUTHORSHIP. Title. Place: Editor, date. Specific designation of the kind of document (when it does not appear in the title), dimensions (if applicable). Scale. CARTOGRAPHIC DOCUMENT
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15. AUTHORSHIP. Software name (version – if applicable). Place (if applicable), year. ). Available in: < electronic address> (if applicable). COMPUTER PROGRAMS (SOFTWARE)

**Examples of references**

For scientific article:

1. ARATTANO, M.; FRANZI, L. On the evaluation of debris flows dynamics by means of mathematical models. Natural Hazards and Earth System Science, v. 3, n. 6, p. 539–544, 2003. DOI: 10.5194/nhess-3-539-2003

For book:

1. HUGGET, R. J. Fundamentals of Geomorphology. 4ª Ed. Londres: Taylor and Francis, 2016. 578p. <https://doi.org/10.4324/9781315674179>

For book chapter:

1. CASTRO, S. S. Micromorfologia de Solos Aplicada ao Diagnóstico de Erosão. In: GUERRA, A. J. T.; SILVA, A. S; BOTELHO, R. G. M. (Ed.). Erosão e Conservação dos solos: Conceitos, temas e aplicações. 1ª Ed. Rio de Janeiro: Bertrand Brasil, 1999. p. 127-163.

For works in annals of events:

1. NOVO, E. M. L. M.; BARBOSA, C. C. F.; FREITAS, R. M.; MELACK, J.; SHIMABUKURO, Y. E.; PEREIRA FILHO, W. Distribuição sazonal de fitoplâncton no Lago Grande de Curuai em resposta ao pulso de inundação do Rio Amazonas a partir da análise de imagens MODIS. In: XII Simpósio Brasileiro de Sensoriamento Remoto (SBSR), 12., 2005, Goiânia. Proceedings... São José dos Campos: INPE. 2005. p. 3175-3182. ISBN 85-17-00018-8.

For Masters dissertations and/or PhD thesis:

1. MONTANHER, O. C. Padrões espaço-temporais do transporte de sedimentos suspensos dos rios amazônicos de águas brancas: relações com o clima e mudanças na cobertura do solo. PhD thesis (in Geography) - Programa de Pós-Graduação em Geografia, Universidade Estadual de Maringá, Maringá. 2016. 253p.

For technical report, handbook:

1. IPT. Ocupação de encostas. São Paulo: IPT, 1991. 216p. Publicação IPT n. 1831.

For cartographic document:

1. IBGE. Estado de Roraima - Geologia. Rio de Janeiro: IBGE, 2005. Escala 1:250.000.

For software:

1. QGIS Development Team. QGIS Geographic Information System (versão 3.16). 2021. Available at:: <http://qgis.osgeo.org>.
2. Esri Inc. ArcMap (versão 10.5.1). Redlands, Estados Unidos, 2016.
3. R Core Team. R: A Language and Environment for Statistical Computing. Vienna, Austria, 2020. Available at:: <http://www.R-project.org/>.

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1. Adapted from UFPR Normalization Manual: <<http://hdl.handle.net/1884/45654>>. [↑](#footnote-ref-2)