


Template for Preparing Your Manuscript Submission to LIPIcs Using RMarkdown

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Abstract

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent convallis orci arcu, eu mollis dolor. Aliquam eleifend suscipit lacinia. Maecenas quam mi, porta ut lacinia sed, convallis ac dui. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse potenti.

2012 ACM Subject Classification Replace ccsdesc macro with valid one, e.g., ‘Information systems → Question answering’

Keywords and phrases keyword one, keyword 2, three

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Category Invited paper

Related Version A full version of the paper is available at <https://...>

Supplementary Material See code at <https://github.com/..> and data at <https://doi.org/...>

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Acknowledgements I want to thank ...

1 Typesetting instructions – Summary

LIPIcs is a series of open access high-quality conference proceedings across all fields in informatics established in cooperation with Schloss Dagstuhl. In order to do justice to the high scientific quality of the conferences that publish their proceedings in the LIPIcs series, which is ensured by the thorough review process of the respective events, we believe that LIPIcs proceedings must have an attractive and consistent layout matching the standard of the series. Moreover, the quality of the metadata, the typesetting and the layout must also meet the requirements of other external parties such as indexing service, DOI registry, funding agencies, among others. The guidelines contained in this document serve as the baseline for the authors, editors, and the publisher to create documents that meet as many different requirements as possible.

Please comply with the following instructions when preparing your article for a LIPIcs proceedings volume.

¹ Optional footnote, e.g. to mark corresponding author



38 Minimum requirements

- 39 ■ Use pdf_latex and an up-to-date L^AT_EX system.
- 40 ■ Use further L^AT_EX packages and custom made macros carefully and only if required.
- 41 ■ Use the provided sectioning macros: `\section` (# in Markdown), `\subsection` (## in Markdown), `\subsubsection` (### in Markdown), `\paragraph` (#### in Markdown), `\paragraph*` (#### header {.unnumbered} in Markdown), and `\subparagraph*` (#### header {.unnumbered} in Markdown).
- 42 ■ Provide suitable graphics of at least 300dpi (preferably in PDF format).
- 43 ■ Use BibTeX and keep the standard style (`plainurl`) for the bibliography.
- 44 ■ Please try to keep the warnings log as small as possible. Avoid overfull `\hboxes` and any kind of warnings/errors with the referenced BibTeX entries.
- 45 ■ Use a spellchecker to correct typos.

50 Mandatory metadata macros

51 **NOTE:** *The following macros are set via the YAML header in the R Markdown template.*

52 Please set the values of the metadata macros carefully since the information parsed from these macros will be passed to publication servers, catalogues and search engines. Avoid placing macros inside the metadata macros. The following metadata macros/environments are mandatory:

- 56 ■ `\title` and, in case of long titles, `\titlerunning`.
- 57 ■ `\author`, one for each author, even if two or more authors have the same affiliation.
- 58 ■ `\authorrunning` and `\Copyright` (concatenated author names) \ The `\author` macros and the `\Copyright` macro should contain full author names (especially with regard to the first name), while `\authorrunning` should contain abbreviated first names.
- 59 ■ `\ccsdesc` (ACM classification, see <https://www.acm.org/publications/class-2012>).
- 60 ■ `\keywords` (a comma-separated list of keywords).
- 61 ■ `\relatedversion` (if there is a related version, typically the “full version”); please make sure to provide a persistent URL, e.g., at arXiv.
- 62 ■ `\begin{abstract}... \end{abstract}`.

66 1.0.0.1 Please do not ...

67 Generally speaking, please do not override the `lipics-v2019`-style defaults. To be more specific, a short checklist also used by Dagstuhl Publishing during the final typesetting is given below. In case of **non-compliance** with these rules Dagstuhl Publishing will remove the corresponding parts of L^AT_EX code and *replace it with the `lipics-v2019` defaults*. In serious cases, we may reject the LaTeX-source and expect the corresponding author to revise the relevant parts.

- 73 ■ Do not use a different main font. (For example, the `times` package is forbidden.)
- 74 ■ Do not alter the spacing of the `lipics-v2019.cls` style file.
- 75 ■ Do not use `enumitem` and `paralist`. (The `enumerate` package is preloaded, so you can use `\begin{enumerate}[(a)]` or the like.)
- 76 ■ Do not use “self-made” sectioning commands (e.g., `\bf My Paragraph`).
- 77 ■ Do not hide large text blocks using comments or `\iffalse ... \fi` constructions.
- 78 ■ Do not use conditional structures to include/exclude content. Instead, please provide only the content that should be published – in one file – and nothing else.

81 ■ Do not wrap figures and tables with text. In particular, the package `wrapfig` is not
82 supported.

83 ■ Do not change the bibliography style. In particular, do not use author-year citations.
84 (The `natbib` package is not supported.)

85 This is only a summary containing the most relevant details. Please read the com-
86 plete document “LIPICs: Instructions for Authors and the `lipics-v2019` Class” for all
87 details and don’t hesitate to contact Dagstuhl Publishing (mailto:publishing@dagstuhl.de)
88 in case of questions or comments: [http://drops.dagstuhl.de/styles/lipics-v2019/lipics-v2019-](http://drops.dagstuhl.de/styles/lipics-v2019/lipics-v2019-authors/lipics-v2019-authors-guidelines.pdf)
89 [authors/lipics-v2019-authors-guidelines.pdf](http://drops.dagstuhl.de/styles/lipics-v2019/lipics-v2019-authors/lipics-v2019-authors-guidelines.pdf).

90 **2 Lorem ipsum dolor sit amet**

91 Lorem ipsum dolor sit amet, consectetur adipiscing elit [4]. Praesent convallis orci arcu,
92 eu mollis dolor. Aliquam eleifend suscipit lacinia. Maecenas quam mi, porta ut lacinia sed,
93 convallis ac dui. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse potenti.
94 Donec eget odio et magna ullamcorper vehicula ut vitae libero. Maecenas lectus nulla, auctor
95 nec varius ac, ultricies et turpis. Pellentesque id ante erat. In hac habitasse platea dictumst.
96 Curabitur a scelerisque odio. Pellentesque elit risus, posuere quis elementum at, pellentesque
97 ut diam. Quisque aliquam libero id mi imperdiet quis convallis turpis eleifend.

98 ► **Lemma 1** (Lorem ipsum). *Vestibulum sodales dolor et dui cursus iaculis. Nullam ullam-*
99 *corper purus vel turpis lobortis eu tempus lorem semper. Proin facilisis gravida rutrum.*
100 *Etiam sed sollicitudin lorem. Proin pellentesque risus at elit hendrerit pharetra. Integer at*
101 *turpis varius libero rhoncus fermentum vitae vitae metus.*

102 **Proof.** Cras purus lorem, pulvinar et fermentum sagittis, suscipit quis magna.

103 ▷ **Claim 2.** content...

104 Proof. content... ◀

105 ◀

106 ► **Corollary 3** (Curabitur pulvinar, [2]). *Nam liber tempor cum soluta nobis eleifend option*
107 *congue nihil imperdiet doming id quod mazim placerat facer possim assum. Lorem ipsum*
108 *dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut*
109 *laoreet dolore magna aliquam erat volutpat.*

110 ► **Proposition 4.** *This is a proposition*

111 Proposition 4 and Proposition 4 ...

112 **2.1 Curabitur dictum felis id sapien**

113 Curabitur dictum Corollary 3 felis id sapien Corollary 3 mollis ut venenatis tortor feugiat.
114 Curabitur sed velit diam. Integer aliquam, nunc ac egestas lacinia, nibh est vehicula nibh, ac
115 auctor velit tellus non arcu. Vestibulum lacinia ipsum vitae nisi ultrices eget gravida turpis
116 laoreet. Duis rutrum dapibus ornare. Nulla vehicula vulputate iaculis. Proin a consequat
117 neque. Donec ut rutrum urna. Morbi scelerisque turpis sed elit sagittis eu scelerisque
118 quam condimentum. Pellentesque habitant morbi tristique senectus et netus et malesuada
119 fames ac turpis egestas. Aenean nec faucibus leo. Cras ut nisl odio, non tincidunt lorem.
120 Integer purus ligula, venenatis et convallis lacinia, scelerisque at erat. Fusce risus libero,
121 convallis at fermentum in, dignissim sed sem. Ut dapibus orci vitae nisl viverra nec adipiscing
122 tortor condimentum [1]. Donec non suscipit lorem. Nam sit amet enim vitae nisl accumsan
123 pretium.

■ **Listing 1** Useless code

```
for i:=maxint to 0 do
begin
  j:=square(root(i));
end;
```

124 2.2 Proin ac fermentum augue

125 Proin ac fermentum augue. Nullam bibendum enim sollicitudin tellus egestas lacinia euismod
 126 orci mollis. Nulla facilisi. Vivamus volutpat venenatis sapien, vitae feugiat arcu fringilla ac.
 127 Mauris sapien tortor, sagittis eget auctor at, vulputate pharetra magna. Sed congue, dui
 128 nec vulputate convallis, sem nunc adipiscing dui, vel venenatis mauris sem in dui. Praesent
 129 a pretium quam. Mauris non mauris sit amet eros rutrum aliquam id ut sapien. Nulla
 130 aliquet fringilla sagittis. Pellentesque eu metus posuere nunc tincidunt dignissim in tempor
 131 dolor. Nulla cursus aliquet enim. Cras sapien risus, accumsan eu cursus ut, commodo vel
 132 velit. Praesent aliquet consectetur ligula, vitae iaculis ligula interdum vel. Integer faucibus
 133 faucibus felis.

- 134 ■ Ut vitae diam augue.
- 135 ■ Integer lacus ante, pellentesque sed sollicitudin et, pulvinar adipiscing sem.
- 136 ■ Maecenas facilisis, leo quis tincidunt egestas, magna ipsum condimentum orci, vitae
 137 facilisis nibh turpis et elit.

138 ► Remark 5. content...

139 3 Pellentesque quis tortor

140 Nec urna malesuada sollicitudin. Nulla facilisi. Vivamus aliquam tempus ligula eget ornare.
 141 Praesent eget magna ut turpis mattis cursus. Aliquam vel condimentum orci. Nunc congue,
 142 libero in gravida convallis [3], orci nibh sodales quam, id egestas felis mi nec nisi. Suspendisse
 143 tincidunt, est ac vestibulum posuere, justo odio bibendum urna, rutrum bibendum dolor sem
 144 nec tellus.

145 ► **Lemma 6** (Quisque blandit tempus nunc). *Sed interdum nisl pretium non. Mauris so-*
 146 *dales consequat risus vel consectetur. Aliquam erat volutpat. Nunc sed sapien ligula. Proin*
 147 *faucibus sapien luctus nisl feugiat convallis faucibus elit cursus. Nunc vestibulum nunc*
 148 *ac massa pretium pharetra. Nulla facilisis turpis id augue venenatis blandit. Cum sociis*
 149 *natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus.*

150 Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui. Nam
 151 vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa sit
 152 amet neque.

153 4 Morbi eros magna

154 Morbi eros magna, vestibulum non posuere non, porta eu quam. Maecenas vitae orci risus,
 155 eget imperdiet mauris. Donec massa mauris, pellentesque vel lobortis eu, molestie ac turpis.
 156 Sed condimentum convallis dolor, a dignissim est ultrices eu. Donec consectetur volutpat
 157 eros, et ornare dui ultricies id. Vivamus eu augue eget dolor euismod ultrices et sit amet
 158 nisi. Vivamus malesuada leo ac leo ullamcorper tempor. Donec justo mi, tempor vitae

159 aliquet non, faucibus eu lacus. Donec dictum gravida neque, non porta turpis imperdiet
 160 eget. Curabitur quis euismod ligula.

161 ——— References ———

- 162 1 Edsger W. Dijkstra. Letters to the editor: go to statement considered harmful. *Commun.*
 163 *ACM*, 11(3):147–148, 1968. doi:10.1145/362929.362947.
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 169 doi:10.1109/SFCS.1975.23.
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 171 doi:10.1145/361604.361612.

172 **A** Styles of lists, enumerations, and descriptions

173 List of different predefined enumeration styles:

174 ■ \begin{itemize}...\end{itemize}

175 ■ ...

176 ■ ...

177 1. \begin{enumerate}...\end{enumerate}

178 2. ...

179 3. ...

180 (a) \begin{alphaenumerate}...\end{alphaenumerate}

181 (b) ...

182 (c) ...

183 (i) \begin{romanenumerate}...\end{romanenumerate}

184 (ii) ...

185 (iii) ...

186 (1) \begin{bracketenumerate}...\end{bracketenumerate}

187 (2) ...

188 (3) ...

189 **Description 1** \begin{description} \item[Description 1] ... \end{description}

190 **Description 2** Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.
 191 Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus
 192 massa sit amet neque.

193 **Description 3** ...

194 Proposition 10 and Proposition 10 ...

195 **B** Theorem-like environments

196 List of different predefined enumeration styles:

197 ► **Theorem 7.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo*
 198 *dui. Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus*
 199 *massa sit amet neque.*

200 ► **Lemma 8.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.*
 201 *Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa*
 202 *sit amet neque.*

203 ► **Corollary 9.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo*
 204 *dui. Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus*
 205 *massa sit amet neque.*

206 ► **Proposition 10.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo*
 207 *dui. Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus*
 208 *massa sit amet neque.*

209 ► **Exercise 11.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo*
 210 *dui. Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus*
 211 *massa sit amet neque.*

212 ► **Definition 12.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo*
 213 *dui. Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus*
 214 *massa sit amet neque.*

215 ► **Example 13.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo*
 216 *dui. Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus*
 217 *massa sit amet neque.*

218 ► **Note 14.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.*
 219 *Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa*
 220 *sit amet neque.*

221 ► **Note.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui. Nam*
 222 *vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa sit*
 223 *amet neque.*

224 ► **Remark 15.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.*
 225 *Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa*
 226 *sit amet neque.*

227 ► **Remark.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.*
 228 *Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa*
 229 *sit amet neque.*

230 ▷ **Claim 16.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.*
 231 *Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa*
 232 *sit amet neque.*

233 ▷ **Claim.** *Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui.*
 234 *Nam vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa*
 235 *sit amet neque.*

236 **Proof.** Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui. Nam
237 vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa sit
238 amet neque. ◀

239 Proof. Fusce eu leo nisi. Cras eget orci neque, eleifend dapibus felis. Duis et leo dui. Nam
240 vulputate, velit et laoreet porttitor, quam arcu facilisis dui, sed malesuada risus massa sit
241 amet neque. ◀

242 List of different predefined enumeration styles: