HOW TO PREPARE YOUR MANUSCRIPT FOR JORSJ

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(March 7, 2016)

Abstract   This note contains the instructions to help you prepare your manuscript for *Journal of the Operations Research Society of Japan* (JORSJ). Basic format is explained in Section 2, and Section 3 provides examples of the usage of LaTeX commands and environments.

    Keywords: Optimization, second-order cone, Slater constraint qualification, KKT condition, nonlinear programming

1. Introduction

Authors are requested to prepare a LaTeX file of their manuscript by using the style file `ejorsj-s2.sty`, which is available from the Society's web site. The JORSJ style does not change any standard LaTeX commands, so that the authors can freely define their own new commands by placing those definitions in the preamble before `\begin{document}`. However, please avoid changing the formatting parameters such as margins, line spacing and font sizes.

When the paper is accepted for publication, a small revision is made by the editorial office to conform the manuscript to the JORSJ style, and the corresponding author will be asked to proofread the final manuscript before sent to the printing house.

2. Basic Format

2.1. Title

Give the title by `\title{}` command in all capital letters such as
`\title{HOW TO PREPARE YOUR MANUSCRIPT FOR JORSJ}`.

2.2. Name(s) and affiliation(s) of author(s)

List the names and institutional affiliations of all authors separated by `&` in the `tabular` environment within the brace brackets of `\author{}` command. The affiliations should be in italics and go to the second line.

2.3. Abstract

Give an abstract of 100 to 200 words by using `abstract` environment. Avoid mathematical formulas, undefined abbreviations and literature citations.

2.4. Keywords

Provide two to six keywords in the brace brackets of `\keyword{}` command. Select the first keyword out of the Keyword list for JORSJ in Table 1, and capitalize its first letter. Other keywords should be wholly uncapitalized except for proper nouns and acronyms.

2.5. Sections and subsections

Use `\section{}` or `\subsection{}` command for the (sub)section title. Capitalize the first letter of each word of the section title, e.g., `\section{Basic Format}`. Only the first letter of subsection title should be capitalized, e.g., `\subsection{Sections and subsections}`.

Table 1: Keyword list for JORSJ

A	AHP, algorithm, applied probability
C	combinatorial optimization, computer, control
D	data analysis, DEA, decision making, discrete optimization, dynamic programming
E	economics, education, energy, environment
F	facility planning, finance, forecasting, fuzzy set
G	graph theory, game theory
H	health care,
I	information technologies, inventory,
L	linear programming, logistics
M	maintenance, manufacturing, marketing, Markov process, mathematical modeling
N	network flow, nonlinear programming
O	optimization, organization theory, OR practice
P	project planning, public service
Q	quality control, queue
R	reliability, risk management
S	scheduling, search, simulation, statistics, stochastic optimization, system dynamics
T	telecommunication, transportation

2.6. Corresponding author

Provide the corresponding author's name, complete mailing address and e-mail address at the end of the paper. Use `\texttt{}` command for the e-mail address.

2.7. Formulas

Use `\[\]`, `equation`, `eqnarray`, `align`, `alignat` environments or their variations to display formulas. Formulas, if referred to in the text, should be numbered consecutively throughout the paper such as (1), (2) or (1.1), (1.2).

2.8. Theorem etc.

Use `theorem` environment to present theorems, lemmas, corollaries, remarks, definitions, e.g., `\begin{theorem}\label{thm:1}\rm ...\end{theorem}`. The environments should be defined in the preamble before `\title{}`. Place your proof in `proof` environment, which automatically puts *Proof.* and a QED symbol □.

2.9. Artwork and tables

It is strongly recommended that the artwork be submitted in EPS format. Make sure that it will convey full information when printed in black and white. Use `figure` environment to create a figure and give an explanatory legend in the brace brackets of `\caption{}`. For tables use `table` environment and give a caption explaining the components of the table in `\caption{}`. Capitalize only the first letter of the legend and the caption and do not follow them with a period. When referring to figures in the text, use "Figure 1","Figure 2", instead of abbreviations "Fig. 1", "Fig. 2". "Table" is also not abbreviated.

2.10. References

Provide a complete list of references arranged in alphabetical order by the first author's surname. Use `\cite{}` command when you cite a literature in the list of references, e.g., `Fujishige~\cite{Fu89}` for "Fujishige [1]." When you cite more than one reference paper, separate each label with a comma and do not leave a space, e.g., `\cite{Fu89,KlTa05}` for

"[1, 2]." When you refer a literature accessed online, provide a digital object identifier (DOI) whenever possible or a stable URL as well as the date that you retrieved the literature.

In the list of references [3], [4], and [5] are examples for the reference to a journal paper, [1] to a paper in a contributed volume, and [2] to a book. Basically, the references should be written as follows:

Books

>   Author(s): *Book Title* (Publisher, year).

Papers in a contributed volume (edited books)

>   Author(s): Paper title. In Editor(s) (eds.): *Book Title* (Publisher, year), pages.

Journal papers

>   Author(s): Paper title. *Journal Name*, **volume** (year), pages.

Consider also the instructions below. We may note that it is not necessary to follow these instructions absolutely when a manuscript is submitted as a new submission. However, the authors will be requested to follow them when the manuscript is at the revision stage, in order to be accepted for publication.

- Insert a colon (:) after the authors' names.
- Write the surname after the first and middle names, e.g., M. Kojima, P.D. Welch.
- If an author has middle names, do not put spaces between the first and the middle names' initials, e.g., write P.D. Welch instead of P. D. Welch.
- Insert a period (.) after papers' titles. For a paper, capitalize only the first letter of the first word of its title and all proper nouns.
- For books' titles and journal names, use italics and avoid abbreviations. Capitalize the first letter of each word, except for articles, prepositions and coordinating conjunctions.
- Use bold font for journals' volumes. The issue number is optional. To write it, just insert a hyphen (-) between the volume and the issue, e.g., for volume 1 and issue 2, use **1-2**.
- For books and contributed volumes, write the publisher, the place (if any), and the year between parentheses, and separate them with commas (,).
- Do not insert "pp." before the pages. For page ranges, use en-dash (–) instead of hyphen (-), e.g., 198–204.
- Insert a period (.) at the end of each reference.

Section 3 will provide some examples of the usage of LaTeX commands and environments.

3. Examples

3.1. Clustering polytope

...... Thus the clustering problem on $N := \{1, 2, \ldots, n\}$ is formulated as a linear optimization problem on the clustering polytope.

Definition 3.1 (Clustering polytope)**.** We refer to the convex hull of the incidence vectors of all the clusterings of N as *clustering polytope*. We denote it by P, i.e.,

$$P := \mathrm{co} \left\{ \boldsymbol{x} \in \mathbb{R}^{n(n-1)} \mid \boldsymbol{x} \text{ is the incidence vector of a clustering of } N \right\}, \qquad (3.1)$$

where co means the convex hull.

Lemma 3.1. A binary vector $\boldsymbol{x} \in \mathbb{R}^{n(n-1)}$ is the incidence vector of a clustering if and only if it satisfies

$$
\begin{aligned}
x_{ij} - x_{ji} &= 0 && \text{for all } (i,j) \in N_{\neq}^2 && \text{(symmetry)} && (3.2) \\
x_{ij} + x_{jk} - x_{ki} &\leq 1 && \text{for all } (i,j,k) \in N_{\neq}^3. && \text{(transitivity)} && (3.3)
\end{aligned}
$$

Proof. It is clear from definition that the incidence vector satisfies (3.2). ...... $\square$

Theorem 3.1. The transitivity condition (3.3) is a facet-defining valid inequality of the clustering polytope P.

Proof. We prove the assertion by induction over n. .... This completes the proof.

$\square$

3.2. Acyclic graph game

.... They showed in [4] that

$$
x_i^r = v(des(i)) - \sum_{j \in suc(i)} v(des(j))
$$

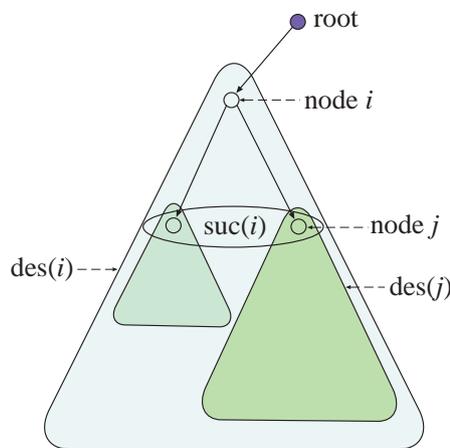holds for all $i \in N$. Figure 1 illustrates a tree and its subtrees.

Figure 1: Tree and subtrees

References

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