The 50th ISCIE International Its Applications Instruction for Authors

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Abstract

This document provides instructions for authors for preparing and submitting the manuscripts for the Proceedings of the 49th ISCIE International Symposium on Stochastic System Theory and Its Applications. This document (including this abstract) itself is an example of the desired layout for camera-ready papers. The guidelines detailed in this document will enable the Conference to maintain uniformity in the final proceedings and to avoid additional publication charges. To ensure high-quality proceedings, readability of your original manuscript is of paramount importance. Also, adherence to deadlines is critical because a great portion of the publication process is performed sequentially.

1 Introduction

The manuscript for the Proceedings should be prepared in accordance with the present instructions. The Symposium Proceedings will be published at the on-line electronic journal cite J-Stage (Japan Science and Technology Information Aggregator, Electronic). Authors are requested to prepare the camera-ready manuscripts on **A4** paper, written in English, in **PDF** format. The size of the electronic file should not exceed **5MB**.

The manuscript should not exceed **10 pages** (6 pages are recommended) including figures, tables, photos, references and appendices. The author who wishes to write the manuscript more than 10 pages or more than 5MB memory should contact with the SSS'17 Steering Committee for permission.

On A4 paper, the Conference requires a font size of **10 points or greater**. Some technical formatting programs print mathematical formulas in italic type, with subscripts and superscripts in a slightly smaller font size.

In order to assure a high-quality Proceedings, all manuscripts will be reviewed and only accepted ones will appear in the Proceedings.

2 カルマンフィルタの説明

この章では提案するカルマンフィルタのモデルを説明をする．本研究ではアイガモロボットを対象としており，このロボットは 2 次元平面上を移動する．カルマンフィルタの予測フェーズ

$$\hat{x}_{t+\Delta t|t} = F_t \hat{x}_t + B_t u_t$$
$$= \hat{x}_t + B_t u_t \tag{1}$$

$$\hat{P}_{t+\Delta t|t} = F_t P_{t|t} F_t^T + Q$$
$$= P_{t|t} + Q \tag{2}$$

$$\begin{bmatrix} \hat{x}_{t+\Delta t|t} \\ \hat{y}_{t+\Delta t|t} \\ \hat{\theta}_{t+\Delta t|t} \end{bmatrix} = \begin{bmatrix} \hat{x}_{t|t} \\ \hat{y}_{t|t} \\ \hat{\theta}_{t|t} \end{bmatrix} + \begin{bmatrix} \Delta t cos\hat{\theta}_{t|t} & 0 \\ \Delta t sin\hat{\theta}_{t|t} & 0 \\ 0 & \Delta t \end{bmatrix} \begin{bmatrix} v_t \\ \omega_t \end{bmatrix} \tag{3}$$

$$e_t = \hat{x}_t - x_t = \begin{bmatrix} \hat{x}_t - x_t \\ \hat{y}_t - y_t \\ \hat{\theta}_t - \theta_t \end{bmatrix} \tag{4}$$

$$P_{t|t} = E\left(e_t e_t^T\right) \tag{5}$$

$$\begin{bmatrix} \sigma_{xx,t|t+\Delta t} & \sigma_{xy,t|t+\Delta t} & \sigma_{xz,t|t+\Delta t} \\ \sigma_{yx,t|t+\Delta t} & \sigma_{yy,t|t+\Delta t} & \sigma_{yz,t|t+\Delta t} \\ \sigma_{zx,t|t+\Delta t} & \sigma_{zy,t|t+\Delta t} & \sigma_{zz,t|t+\Delta t} \end{bmatrix}$$
$$= \begin{bmatrix} \sigma_{xx,t|t} & \sigma_{xy,t|t} & \sigma_{xz,t|t} \\ \sigma_{yx,t|t} & \sigma_{yy,t|t} & \sigma_{yz,t|t} \\ \sigma_{zx,t|t} & \sigma_{zy,t|t} & \sigma_{zz,t|t} \end{bmatrix} + \begin{bmatrix} q_x^2 & 0 & 0 \\ 0 & q_y^2 & 0 \\ 0 & 0 & q_\theta^2 \end{bmatrix} \tag{6}$$

カルマンフィルタの更新フェーズ

$$y_t = z_t - H_t \hat{x}_{t+\Delta t|t} \tag{7}$$

$$S_t = R + H_t P_{t+\Delta t|t} H_t^T \tag{8}$$

$$\hat{x}_{t+\Delta t|t+\Delta t} = x_{t+\Delta t|t+\Delta t} \tag{9}$$

3 カルマンフィルタに用いる分散の取得実験

Regarding the styles of your manuscript, please conform to the following

3.1 Title

The title should be centered across the top of the first page and should be in a distinctive point size or font.

3.2 Author's Names and Address

The authors' names and addresses should be centered below the title. It is desirable that these lines are typed in at least eleven point font size, but the particular point sizes and fonts are not critical and are left to the direction of the authors. Times new Roman 12 point is suggested. Please include your E-Mail address.

3.3 Headings

Main headings are to be column centered in a bold font without an underline. They may be numbered, if so desired.

Subheadings should be in a bold font or underlined lowercase with initial capitals. They should start at the left-hand margin on a separate line.

Sub-subheadings are to be in a bold font or underlined type. They should be indented and run in at the beginning of the paragraph.

3.4 Figures and Tables

Figures and photos should be consecutively numbered like Fig. 1, Fig. 2, Figures should be inserted near their citation or at the end of the manuscript. Large figures and tables may span across both columns if necessary. Figure captions should be placed below the figures.

3.5 References

List and number all references at the end of the paper as shown below. Number reference citations consecutively in square brackets [1].

3.6 Page Numbers

Do not write page numbers on your manuscript. These will be inserted later by the proceedings printer together with the session number and conference identifications.

4 Manuscript Submission

Authors are requested to send their manuscripts electronically by **July 31, 2018** on the web:

http://sci-sss.org/sss2018/sub/submission.php

5 Conclusions

Please make an extra effort to adhere to these guidelines as the quality of the publications depends on you. Thank you for your cooperation and contribution. We are looking forward to seeing you at the 49th ISCIE International Symposium on Stochastic Systems Theory and Its Applications (SSS'17).

References

[1] R. E. Kalman and R. S. Bucy: New Results in linear filtering and prediction, *Trans. ASME, J. Basic Eng.*, 82 D, pp.95-108, 1960.

[2] A. H. Jazwinsky: *Stochastic Process and Filtering Theory*, Academic Press, N.Y., 1970.