学术英语写作

Scientific Writing

第四章 投稿须知

提纲

一 投稿

二 审稿

三 回复

四 其他

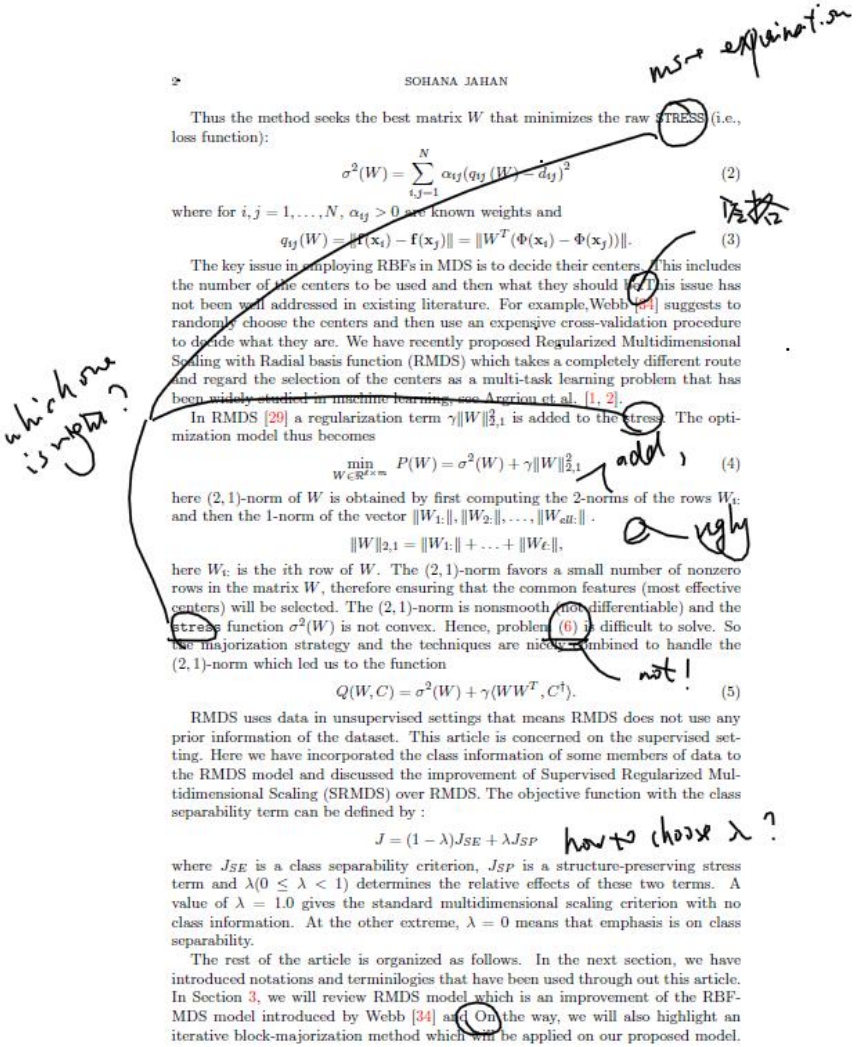
一、投稿

➢ 细节决定成败

- Poor preparation ≈ Poor research

B. Practical case

In this subsection, a process with both continuous and binary variables from ~~a~~ ultra-supercritical thermal power plant (USTPP) is adopted to ~~demonstrated~~ the effectiveness and efficiency of the proposed method. USTPP has attracted much attention in the power industry due to its high efficiency of power generation, low pollution emissions, and high operational reliability [2], [38]. However, it will bring huge



2 SOHANA JAHAN

Thus the method seeks the best matrix W that minimizes the raw STRESS (i.e., loss function):

$$\sigma^2(W) = \sum_{i,j=1}^{N} \alpha_{ij}(q_{ij}(W) - d_{ij})^2 \quad (2)$$

where for $i, j = 1, \ldots, N$, $\alpha_{ij} > 0$ are known weights and

$$q_{ij}(W) = \|\mathbf{f}(\mathbf{x}_i) - \mathbf{f}(\mathbf{x}_j)\| = \|W^T(\Phi(\mathbf{x}_i) - \Phi(\mathbf{x}_j))\|. \quad (3)$$

The key issue in employing RBFs in MDS is to decide their centers. This includes the number of the centers to be used and then what they should be. This issue has not been well addressed in existing literature. For example,Webb [34] suggests to randomly choose the centers and then use an expensive cross-validation procedure to decide what they are. We have recently proposed Regularized Multidimensional Scaling with Radial basis function (RMDS) which takes a completely different route and regard the selection of the centers as a multi-task learning problem that has been widely studied in machine learning, see Argriou et al. [1, 2].

In RMDS [29] a regularization term $\gamma\|W\|_{2,1}^2$ is added to the stress. The optimization model thus becomes

$$\min_{W \in \mathbb{R}^{d \times m}} P(W) = \sigma^2(W) + \gamma\|W\|_{2,1}^2 \quad (4)$$

here $(2,1)$-norm of W is obtained by first computing the 2-norms of the rows $W_{i:}$ and then the 1-norm of the vector $\|W_{1:}\|, \|W_{2:}\|, \ldots, \|W_{d:}\|$.

$$\|W\|_{2,1} = \|W_{1:}\| + \ldots + \|W_{d:}\|,$$

here $W_{i:}$ is the ith row of W. The $(2,1)$-norm favors a small number of nonzero rows in the matrix W, therefore ensuring that the common features (most effective centers) will be selected. The $(2,1)$-norm is nonsmooth (not differentiable) and the stress function $\sigma^2(W)$ is not convex. Hence, problem (6) is difficult to solve. So the majorization strategy and the techniques are nicely combined to handle the $(2,1)$-norm which led us to the function

$$Q(W, C) = \sigma^2(W) + \gamma(WW^T, C^\dagger). \quad (5)$$

RMDS uses data in unsupervised settings that means RMDS does not use any prior information of the dataset. This article is concerned on the supervised setting. Here we have incorporated the class information of some members of data to the RMDS model and discussed the improvement of Supervised Regularized Multidimensional Scaling (SRMDS) over RMDS. The objective function with the class separability term can be defined by :

$$J = (1 - \lambda)J_{SE} + \lambda J_{SP}$$

where J_{SE} is a class separability criterion, J_{SP} is a structure-preserving stress term and $\lambda (0 \leq \lambda < 1)$ determines the relative effects of these two terms. A value of $\lambda = 1.0$ gives the standard multidimensional scaling criterion with no class information. At the other extreme, $\lambda = 0$ means that emphasis is on class separability.

The rest of the article is organized as follows. In the next section, we have introduced notations and terminilogies that have been used through out this article. In Section 3, we will review RMDS model which is an improvement of the RBF-MDS model introduced by Webb [34] and On the way, we will also highlight an iterative block-majorization method which will be applied on our proposed model.

一、投稿

- 细节决定成败

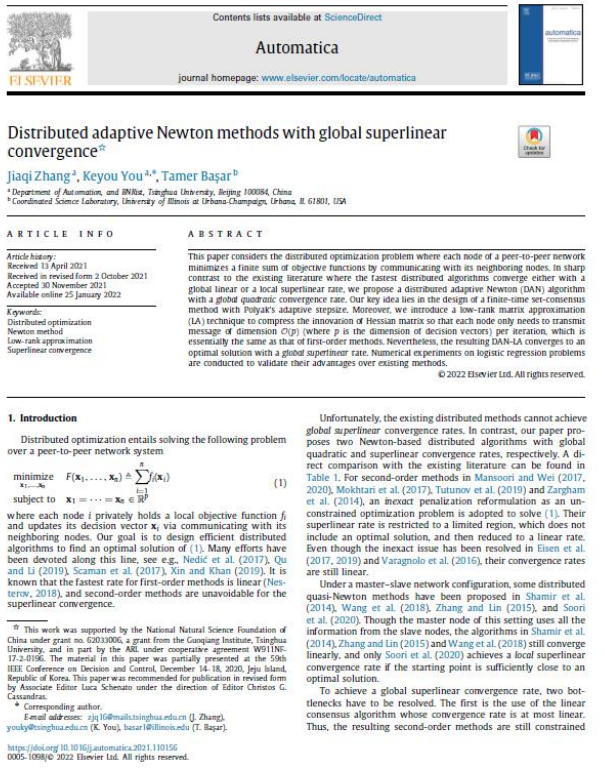
- Wrong format = Wrong journal

IEEE for IEEE
elsevier for Elsevier
Springer for Springer

IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING, VOL. 60, 2022

Deep Spatial-Spectral Global Reasoning Net for Hyperspectral Image Denoising

Xiangyong Cao, Xueyang Fu, Chen Xu, and Deyu Meng, *Member, IEEE*



Automatica 138 (2022) 110156

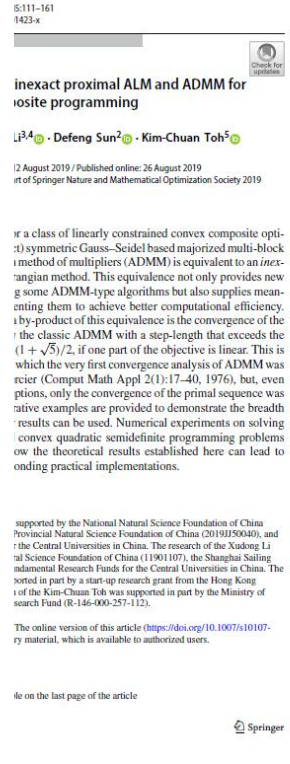
Contents lists available at ScienceDirect

Automatica

journal homepage: www.elsevier.com/locate/automatica

Distributed adaptive Newton methods with global superlinear convergence☆

Jiaqi Zhang, Keyou You, Tamer Başar



inexact proximal ALM and ADMM for ...osite programming

Li, Defeng Sun, Kim-Chuan Toh

一、投稿

➢ 细节决定成败

- Inadvertent plagiarism → Serious damage

一、投稿

➢ 真正的学术造假是有十层境界！

第一境界：全文复制

咳，与其说全文复制，不如说改个名字。小学生的技能嘛，毫无技术难度，这个若还不会我就不说啥了。

但其后果最严重，一经发现立刻名誉扫地，还免不了遭到智商方面的鄙视。

第二境界：部分文本剽窃

这是学生作业中最常见的手段，操作起来比较简单。这一境界还分为I级和II级两个副本。I级就是复制了别人的文本但没有说明出处，一旦被发现，下场比全文复制也轻不到哪去。II级则是说明了出处，但没有指出这一段是直接照搬文本。

不过由于有查重软件的存在，前两种低级又严重的做法很少在发表刊物中见到了。接下来就开始有点难度了哦。

一、投稿

科研 论文 北京理工大学(BIT) 学术不端 科研热点

如何看待北京理工大学某硕士生被指几乎一字不差地抄袭论文?

电光幻影炼金术，香港中文大学 CS PhD在读

最新进展： 9 月 20 日北京理工大学进行了官方回复，校方已启动调查流程，北京理工大学自动化学院已经成立了工作小组调查此事。 投稿论文泄露并被抄袭挪...显示全部

关注问题 写回答 邀请回答 好问题 1306 85 条评论 分享 ···

374 个回答 默认排序

游凯超
清华软件学院博士研究生，人工智能/机器学习/迁移学习

专业 已有 1 人赠与了专业徽章 >

1,367 人赞同了该回答

到目前为止，还没有一篇技术分析帖，大家都是对着PDF截图在做猜想。趁着中秋假期，我来做一篇技术分析吧。

技术分析的主要来源是LaTeX源文件。**arxiv网站要求论文上传者必须上传LaTeX源码，而从这些源码里，能够找到非常丰富的信息。**我将两份LaTeX源码放在了清华云盘，方便大家下载。一份是原作者的，一份是抄袭者的。

在本回答中，我主要想搞清楚，**这次抄袭是来自PDF文件泄露，还是来自源码泄露。**

下面开始技术分析。

翻飞 ···

我是一作，真的对不起王师兄，我们真的就是小鱼小虾，本身已经毕业了自己在家弄些乱七八糟的东西看，也没有导师指导，我也不明白社区什么的，我以为和bbs那些一样，看见了就可以挂在上面，我不懂这些，我的朋友可能也就以为我发给他的玩意就是原本的写的什么东西，间接把朋友推到了火坑，他现在已经被院长通知要做退学处理了，求求各位不要再把事情进一步扩大了，我们真的不是什么圈里的超级学术大臭虫，我们寒窗苦读很多年从农村娃混出来，真的，王师兄要我砍一只手都行，我真的是初见不知道这些东西，我对学术有无止境的向往，我去找地方给人打工，给人做东西，我也不求产出，我就想见识见识最好的东西是什么样子，别的我也不管，我就一门心思写代码，优化，git push，我特别喜欢这种感觉，但是整个流程我不清楚，不懂，不知道，我求求各位高抬贵手放过我们吧，我们真的没有任何其他意思，请让我们活下去，我们还想给我们的家庭带去希望，求求各位了。

刚刚

一、投稿

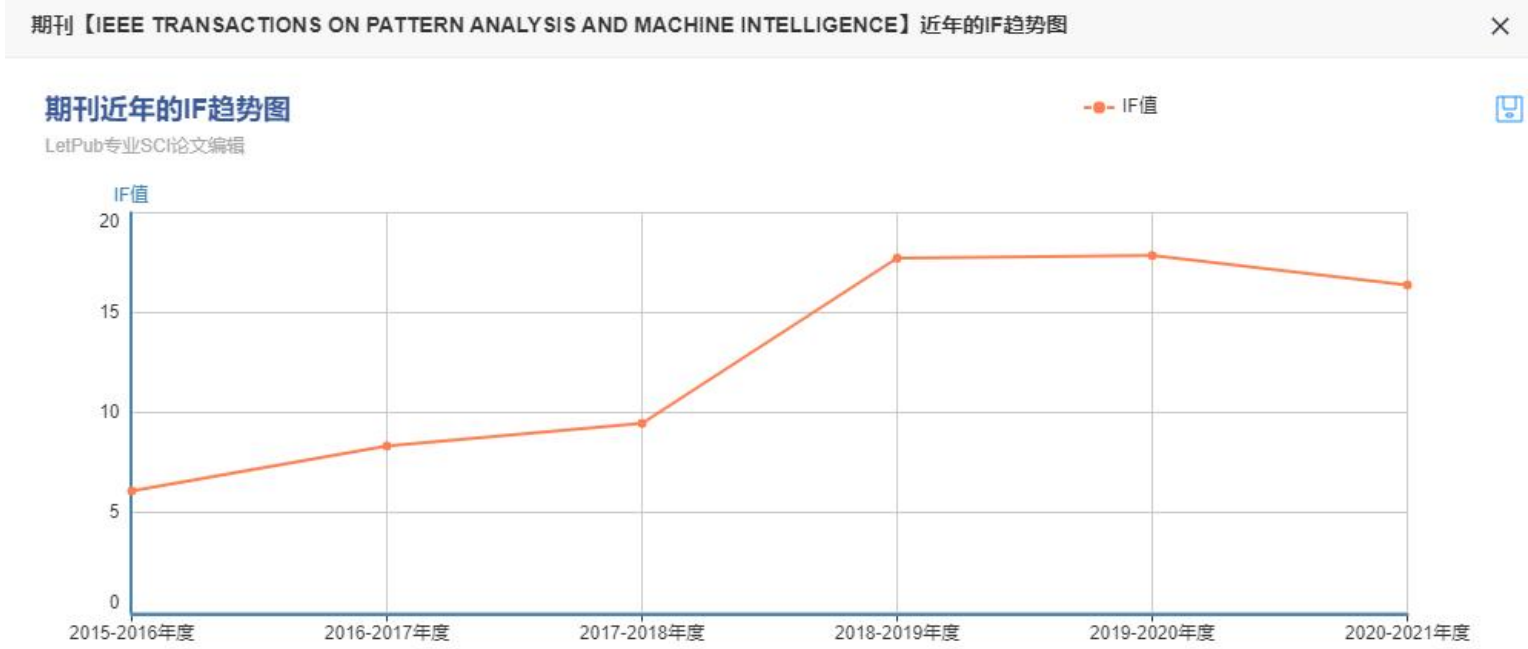
➢ 选择期刊

- 不屑给Nature和Science投稿，这个海龟差点败给影响因子！

一、投稿

➢ 选择期刊

- 不屑给Nature和Science投稿，这个海龟差点败给影响因子！
- 如何将文章发表在高影响因子的期刊上？



一、投稿

➢ 选择期刊

- 不屑给Nature和Science投稿，这个海龟差点败给影响因子！
- 如何将文章发表在高影响因子的期刊上？
- 高IF还是高质量？人才评价遭遇社会共谋困境！

（三）优秀青年博士

人才层次		科研启动费	安家费	其他待遇
A 类	自然科学学科：以第一作者或通讯作者发表 SCI 二区论文 5 篇以上。材料类学科的博士由学校单独研究。 社会科学学科：以第一作者或通讯作者公开发表我校认定的高水平期刊论文 5 篇以上。	理工科 30 万元/社科 15 万元	80 万	符合河北省“名校英才入冀”计划博士享受 5 年 1000 元/月补贴；年薪制 20 万+/年。
B 类	自然科学学科：以第一作者或通讯作者发表 SCI、EI 检索本专业学术论文 3 篇以上，其中博士点所在学科和省级重点学科 SCI 二区以上论文不少于 1 篇，其他学科不作分区要求； 社会科学学科：以第一作者或通讯作者在 CSSCI 来源期刊和我校认定的高水平期刊发表本专业学术论文 3 篇以上。	理工科 10 万元/社科 5 万元	38-70 万	符合河北省“名校英才入冀”计划博士享受 5 年 1000 元/月补贴；符合学校有关规定者可以申请实行协议工资。

一、投稿

➢ 选择期刊

AUTOMATICA期刊基本信息

基本信息	
期刊名字 	AUTOMATICA AUTOMATICA

登录查看中科院JCR分区趋势图

	大类学科	小类学科	Top期刊	综述期刊
中科院SCI期刊分区 （2021年12月最新基础版）	工程技术 2区	AUTOMATION & CONTROL SYSTEMS 自动化与控制系统 2区 ENGINEERING, ELECTRICAL & ELECTRONIC 工程：电子与电气 2区	是	否
中科院SCI期刊分区 （2021年12月最新升级版）	计算机科学 2区	AUTOMATION & CONTROL SYSTEMS 自动化与控制系统 2区 ENGINEERING, ELECTRICAL & ELECTRONIC 工程：电子与电气 2区	是	否
中科院SCI期刊分区 （2020年12月旧的升级版）	计算机科学 2区	AUTOMATION & CONTROL SYSTEMS 自动化与控制系统 2区 ENGINEERING, ELECTRICAL & ELECTRONIC 2区	是	否

投稿经验：
本来老板让投cybernetics的，结果自己不甘心偷偷地投了这个,然后竟然让大修，一周后接收，后来可把老板给乐坏了！

投稿经验：
审稿一般在2-3个月，大部分意见都比较合理，对数学要求高，需要对研究方向的前沿很清晰，最重要的方然还是创新性。

投稿经验：
同意楼上的说法，在此把automatica灌水topic如下：finite time stability, time delay systems, sliding mode control, filtering 之类的

投稿经验：
做的核弹控制方面的工作，投稿2天直接接受。怕我炸了编辑部打电话告诉我直接录用，期间还拍了我半个多小时的马屁。这期刊水平也就那样吧，马马虎虎。

一、投稿

➢ 选择期刊

期刊名字

ANNALS OF MATHEMATICS

ANN MATH

中科院SCI期刊分区（2021年12月最新基础版）	大类学科	小类学科	Top期刊	综述期刊
	数学 1区	MATHEMATICS 数学 1区	是	否

中科院SCI期刊分区（2021年12月最新升级版）	大类学科	小类学科	Top期刊	综述期刊
	数学 1区	MATHEMATICS 数学 1区	是	否

中科院SCI期刊分区（2020年12月旧的升级版）	大类学科	小类学科	Top期刊	综述期刊
	数学 1区	MATHEMATICS 数学 1区	是	否

投稿经验：

普林斯顿大学教授andrew wiles证明费马最终定理的文章就发表在此期刊。《modular elliptic curves and fermat's last theorem》95年443-552/

投稿经验：

差不多各学科所有期刊里最难的了，难度远大于science、nature那些名刊。不少大牌教授能发十几、二十篇cns。但目前为止，似乎没人发过两篇以上这个。发一篇基本可以评院士了。

一、投稿

➢ 选择期刊

匿名用户

2 人赞同了该回答

@littlewood，这统计相当给力啊，之前找半天都没见过类似数据。其实我更好奇，华人发四大累计数量的排行榜，谁来统计下？以及排名前列的人都是谁？top3是哪些人？陶、丘成桐、听说田刚发了20几篇？

统计了下，截止到2021.10，陶33篇，丘29篇，田的数据没找到。目前的华人第一应该是陶了

新增：田25篇。算起来田的四大数不比他老师丘差啊，丘这么黑田，有嫉妒因素吧

编辑于 2022-02-20 20:56

10.陈省身 6篇-论文链接

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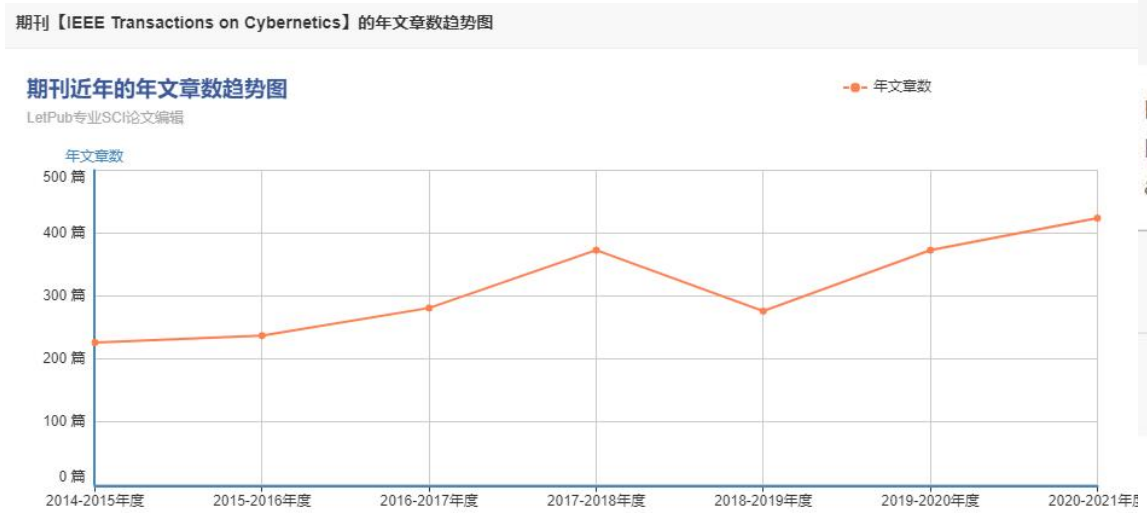
陈省身_百度百科

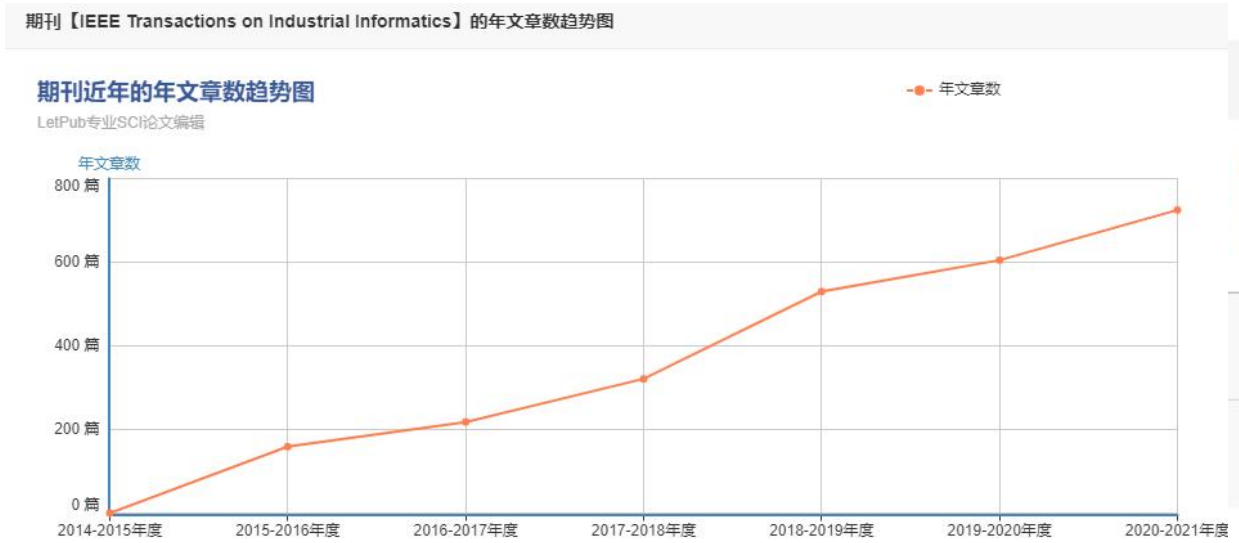
一、投稿

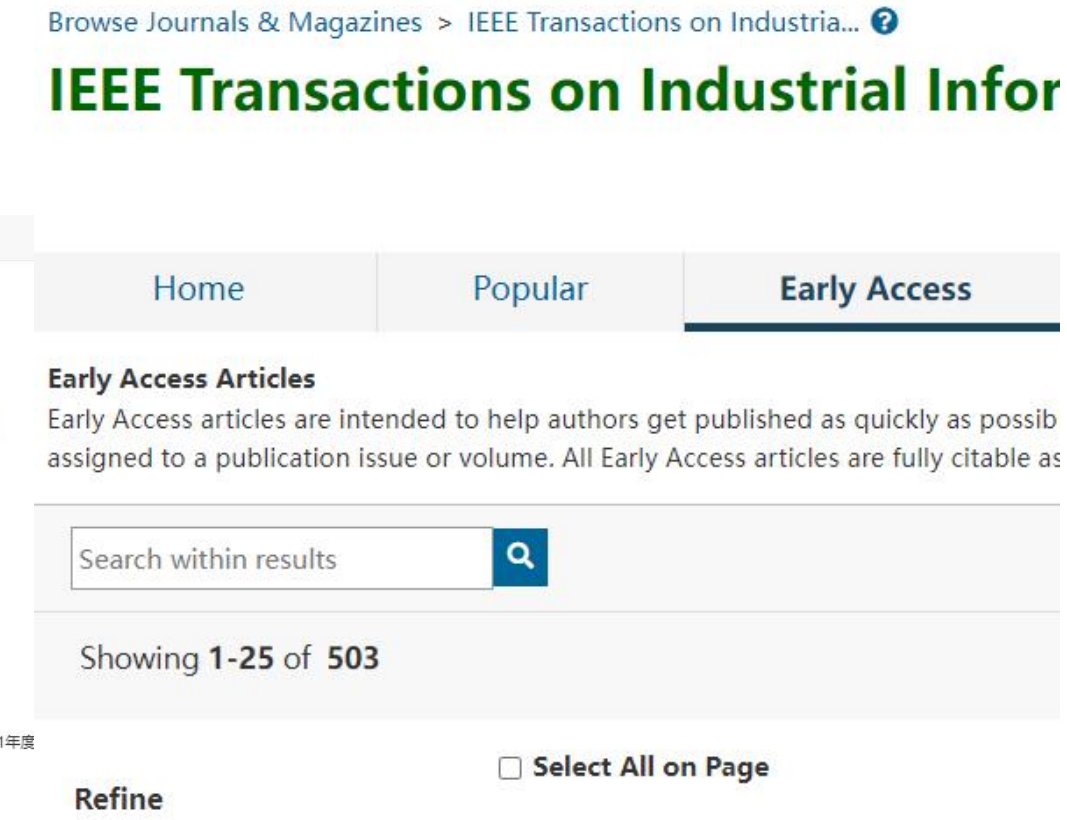
➢ 选择期刊（个人观点）



一、投稿

➢ 选择期刊（个人观点）

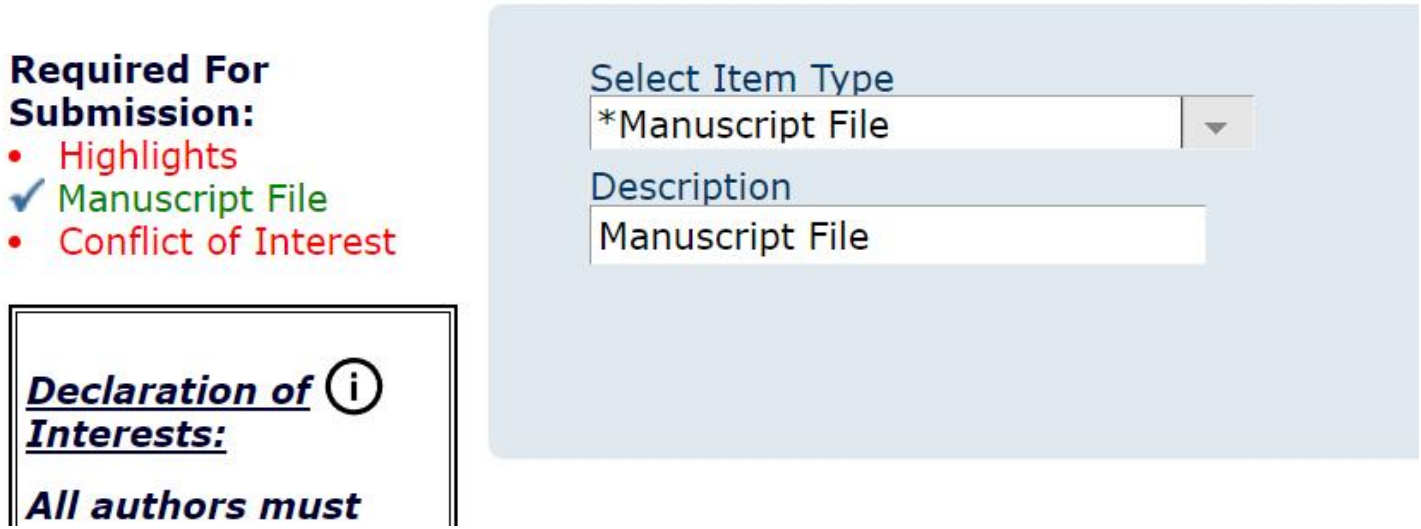




一、投稿

➢ The Cover Letter（附函）

- 一封优秀附函要达成什么目标？

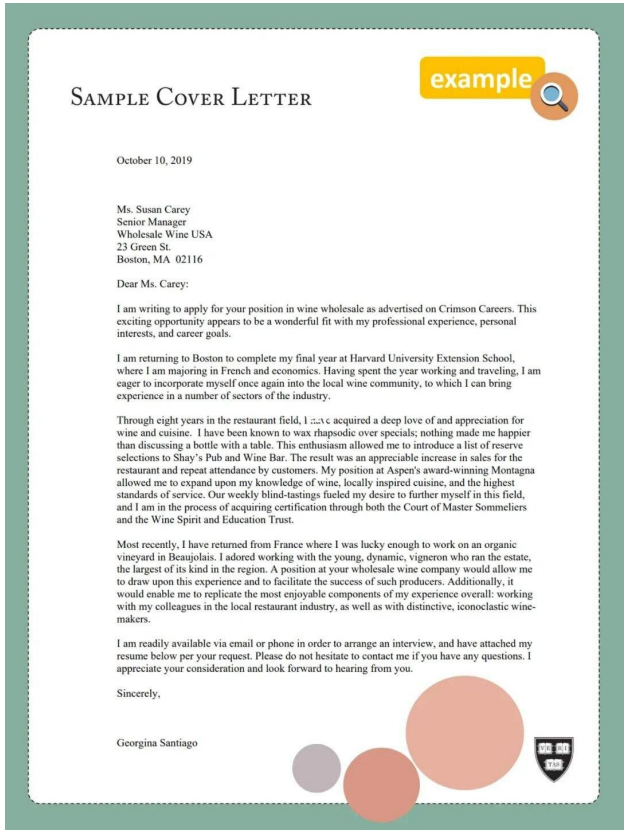


一、投稿

➢ The Cover Letter（附函）

- 一封优秀附函要达成什么目标？

从根本上讲，附函的意义在于影响编辑的决策，以便将你的稿件顺利送交同行评审。



SAMPLE COVER LETTER

example

October 10, 2019

Ms. Susan Carey
Senior Manager
Wholesale Wine USA
23 Green St.
Boston, MA 02116

Dear Ms. Carey:

I am writing to apply for your position in wine wholesale as advertised on Crimson Careers. This exciting opportunity appears to be a wonderful fit with my professional experience, personal interests, and career goals.

I am returning to Boston to complete my final year at Harvard University Extension School, where I am majoring in French and economics. Having spent the year working and traveling, I am eager to incorporate myself once again into the local wine community, to which I can bring experience in a number of sectors of the industry.

Through eight years in the restaurant field, I acquired a deep love of and appreciation for wine and cuisine. I have been known to wax rhapsodic over specials; nothing made me happier than discussing a bottle with a table. This enthusiasm allowed me to introduce a list of reserve selections to Shay's Pub and Wine Bar. The result was an appreciable increase in sales for the restaurant and repeat attendance by customers. My position at Aspen's award-winning Montagna allowed me to expand upon my knowledge of wine, locally inspired cuisine, and the highest standards of service. Our weekly blind-tastings fueled my desire to further myself in this field, and I am in the process of acquiring certification through both the Court of Master Sommeliers and the Wine Spirit and Education Trust.

Most recently, I have returned from France where I was lucky enough to work on an organic vineyard in Beaujolais. I adored working with the young, dynamic, vigneron who ran the estate, the largest of its kind in the region. A position at your wholesale wine company would allow me to draw upon this experience and to facilitate the success of such producers. Additionally, it would enable me to replicate the most enjoyable components of my experience overall: working with my colleagues in the local restaurant industry, as well as with distinctive, iconoclastic wine-makers.

I am readily available via email or phone in order to arrange an interview, and have attached my resume below per your request. Please do not hesitate to contact me if you have any questions. I appreciate your consideration and look forward to hearing from you.

Sincerely,

Georgina Santiago

一、投稿

➢ The Cover Letter（附函）

Dear XXX Editor,

I would like to submit my joint manuscript with colleagues entitled XXX for possible publication in XXX.

……

Thank you very much for your consideration and I look forward to your editorial decision.

Sincerely yours,
XXX

- 收信编辑
- 文章题目与杂志名称
- 研究背景、理论基础以及意义
- 声明或说明
- 通讯方式

一、投稿

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……

Thank you very much for your consideration and I look forward to your editorial decision.

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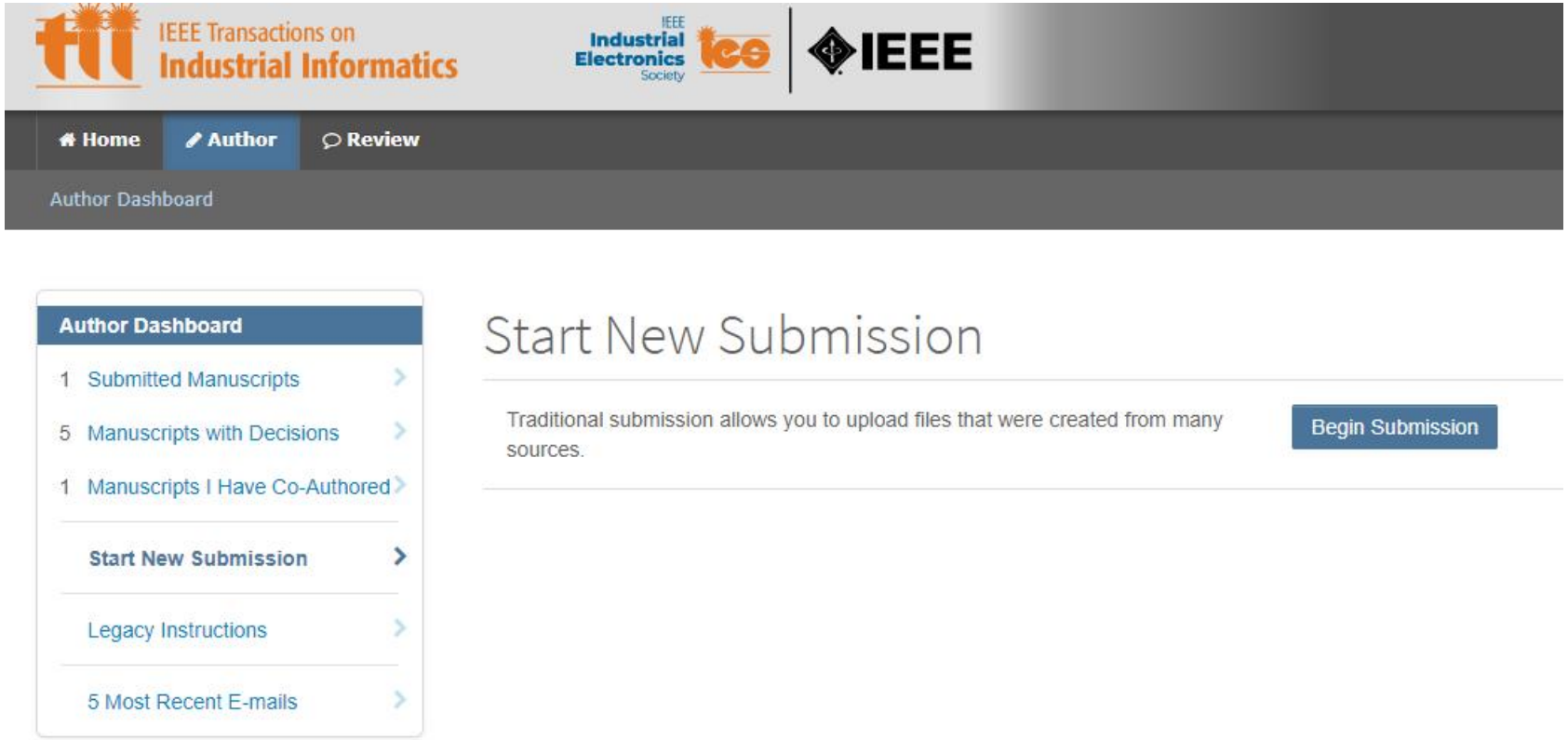
XXX

➢ 注意事项

- 不要重复摘要、引言、结论的内容！
- 如果是二次投稿，仔细检查！
- 落款务必是通讯作者???

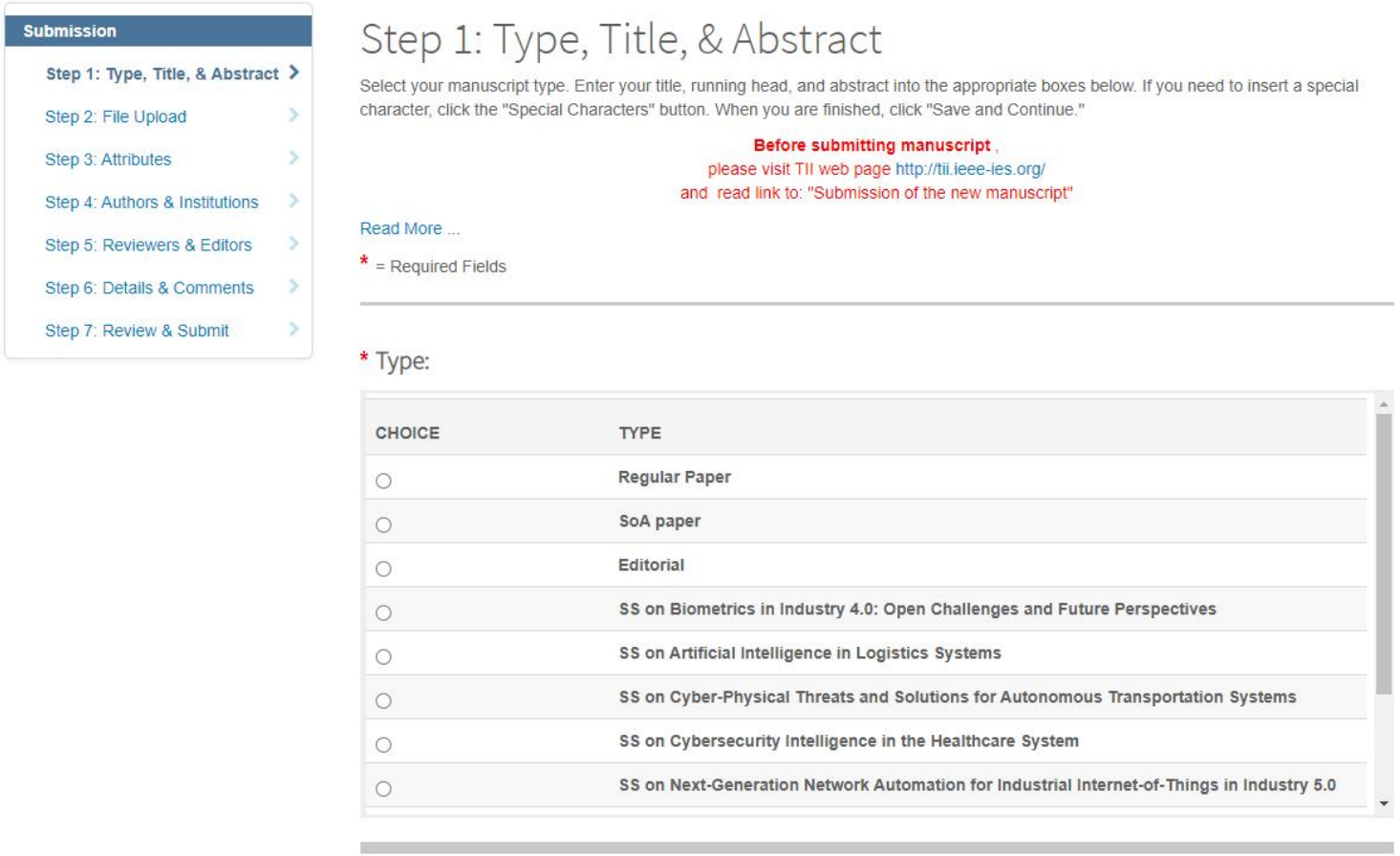
一、投稿

➢ 流程


IEEE Transactions on
Industrial Informatics
IEEE
Industrial
Electronics
Society
IEEE
Home
Author
Review
Author Dashboard
Author Dashboard
1 Submitted Manuscripts
5 Manuscripts with Decisions
1 Manuscripts I Have Co-Authored
Start New Submission
Legacy Instructions
5 Most Recent E-mails
Start New Submission
Traditional submission allows you to upload files that were created from many sources.
Begin Submission

一、投稿

➢ 流程：第一步


Submission
Step 1: Type, Title, & Abstract
Step 2: File Upload
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Step 4: Authors & Institutions
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一、投稿

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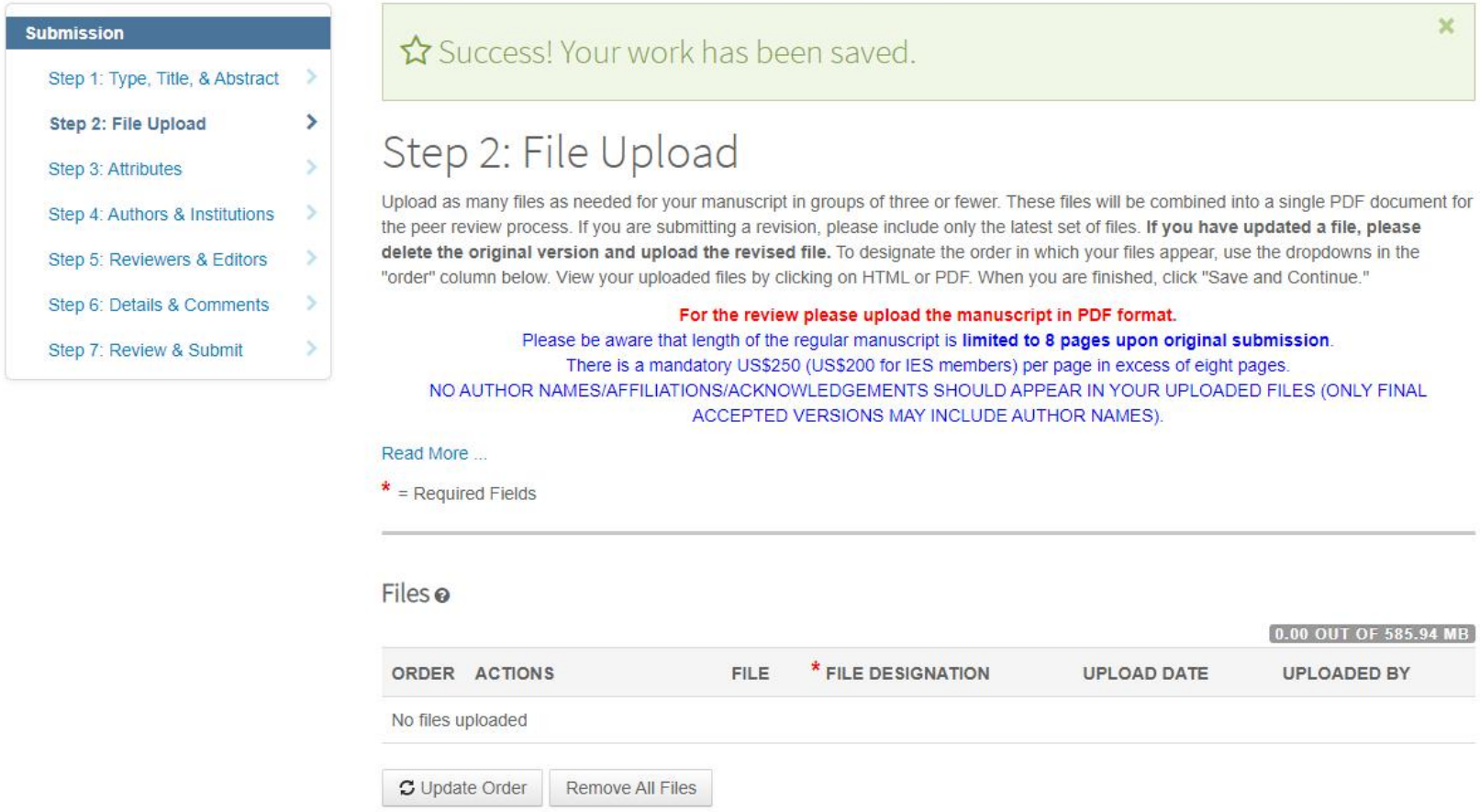
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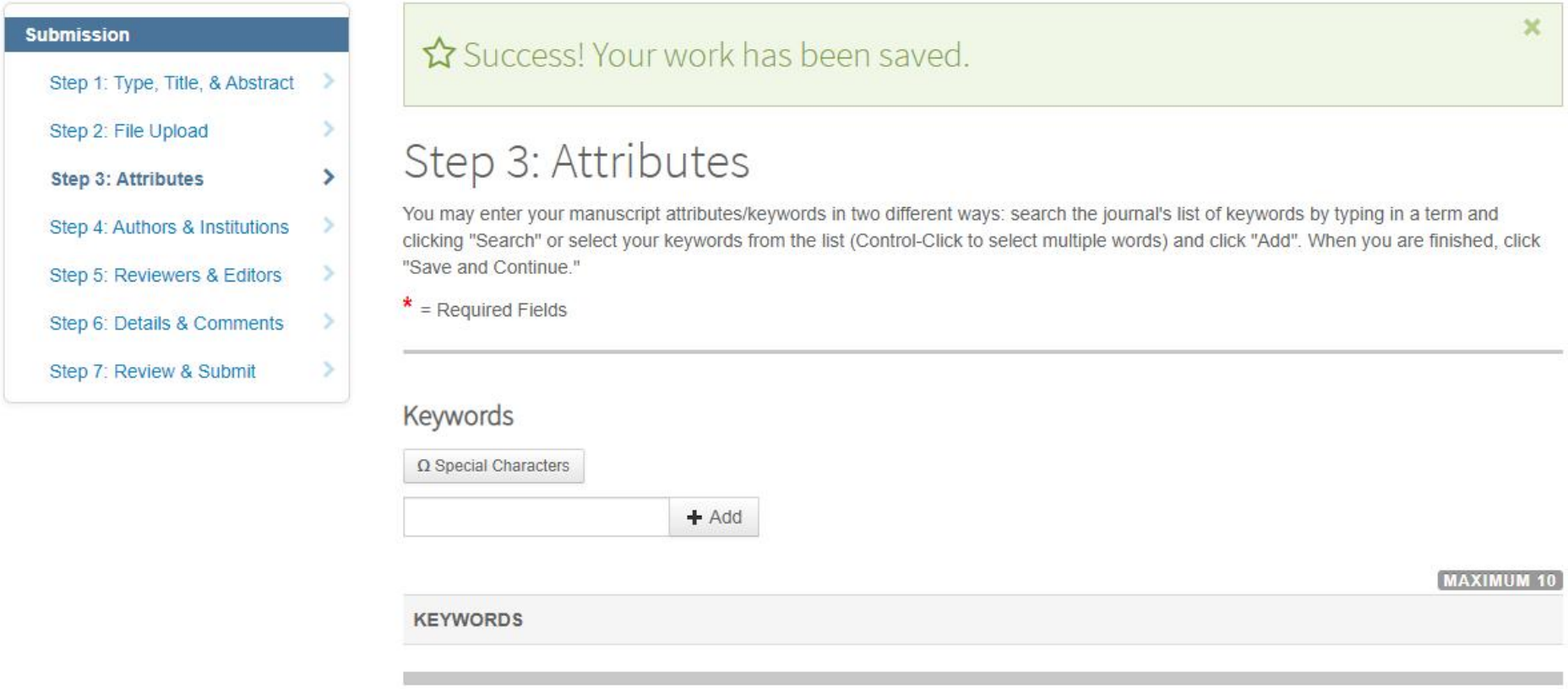
一、投稿

➢ 流程：第三步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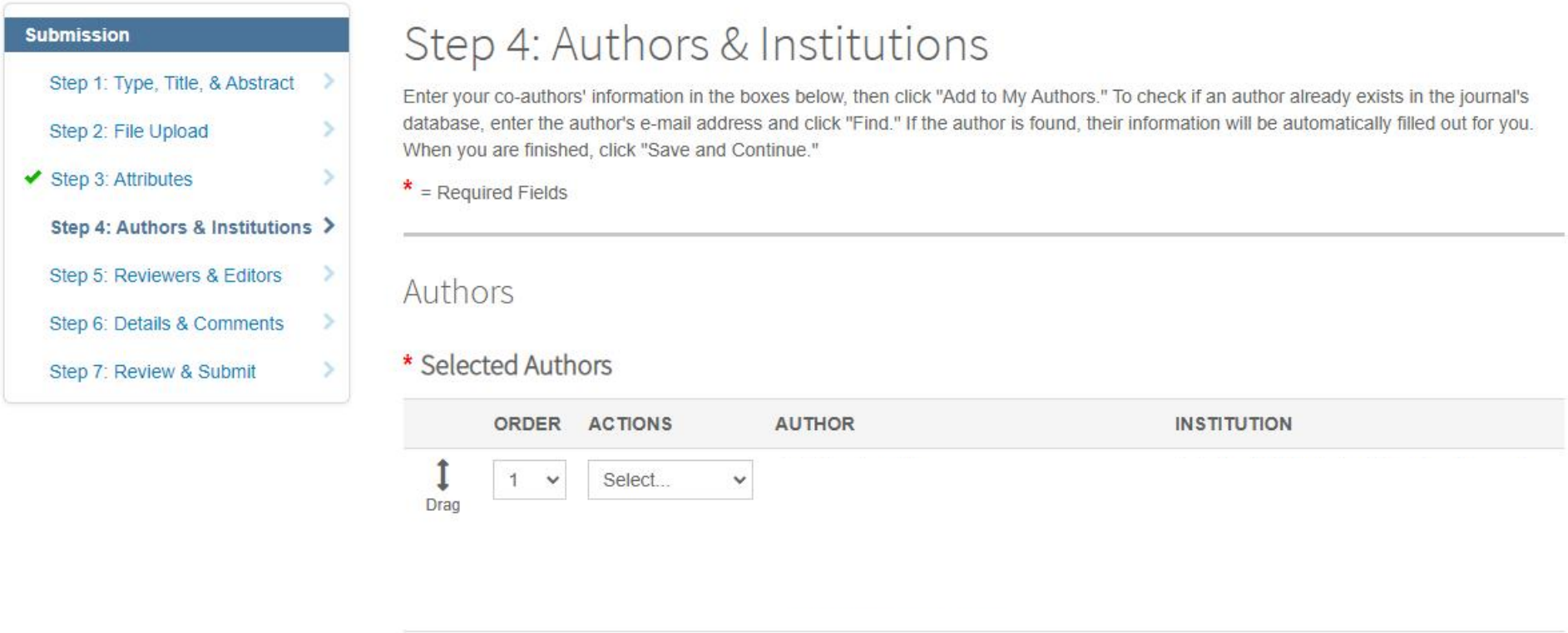
一、投稿

➢ 流程：第四步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一、投稿

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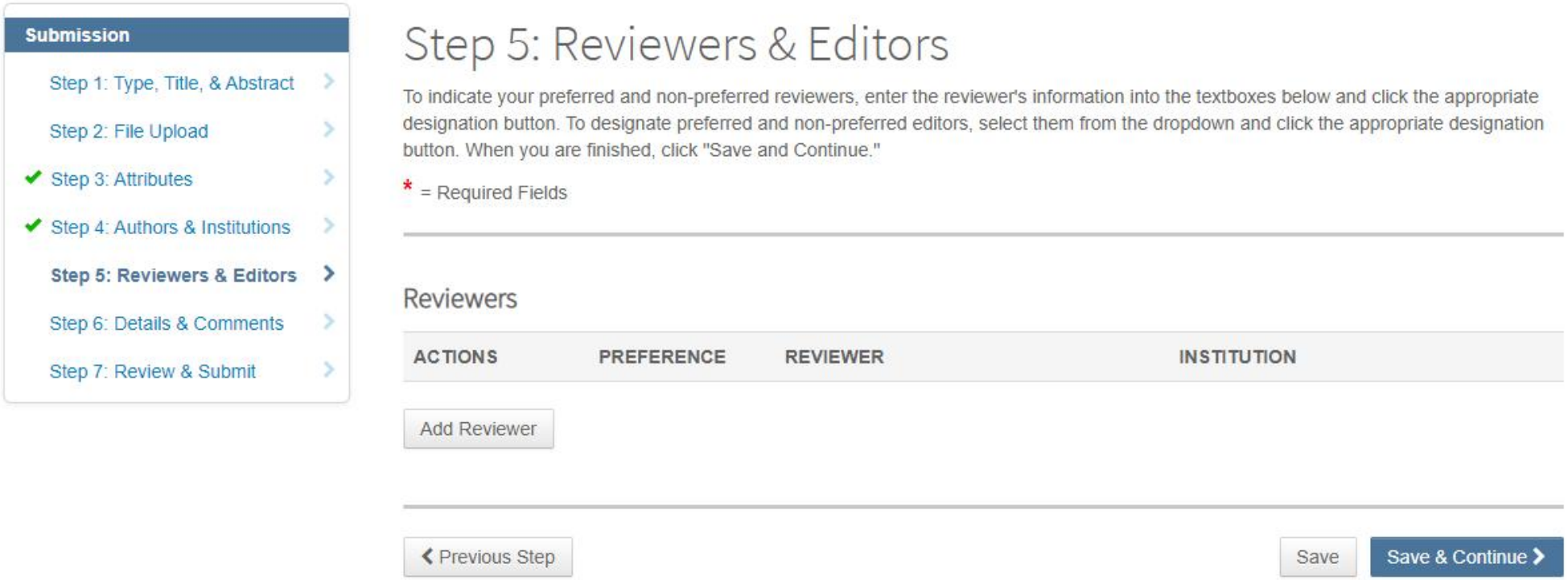
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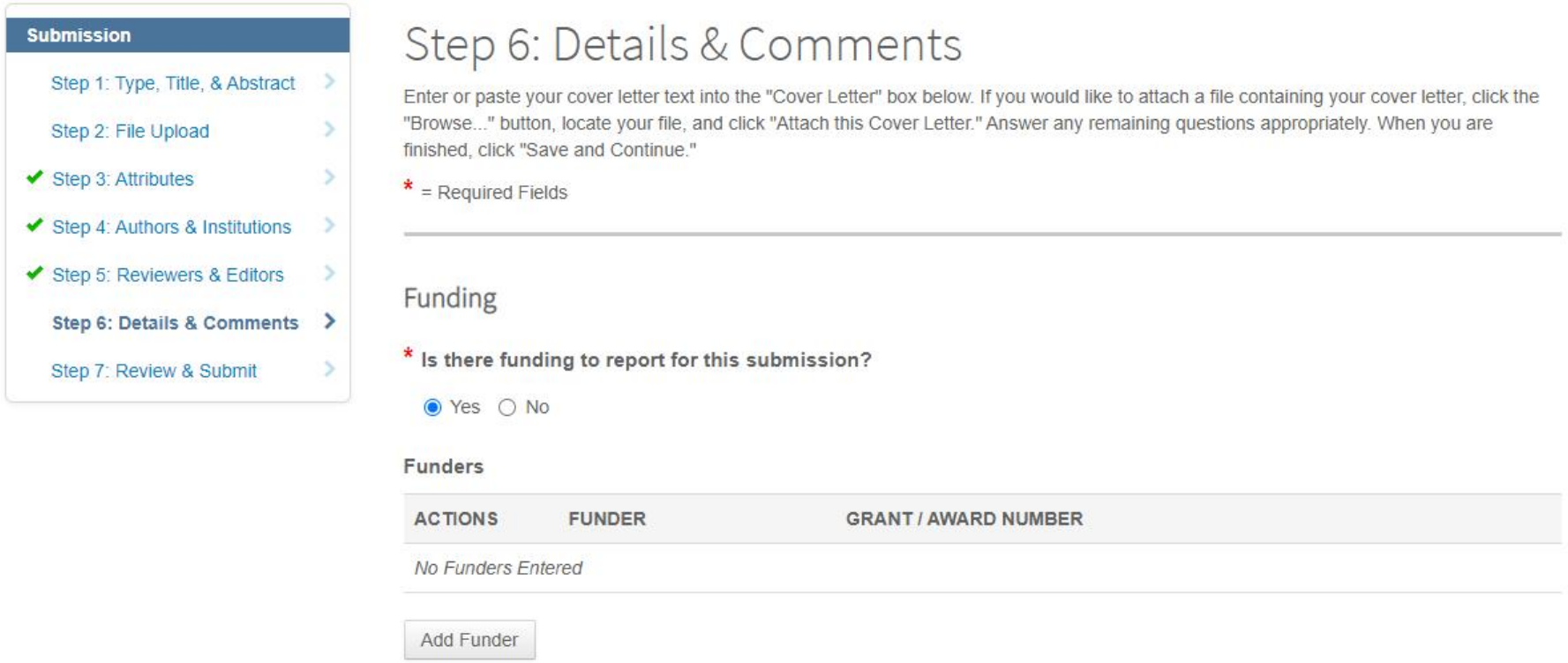
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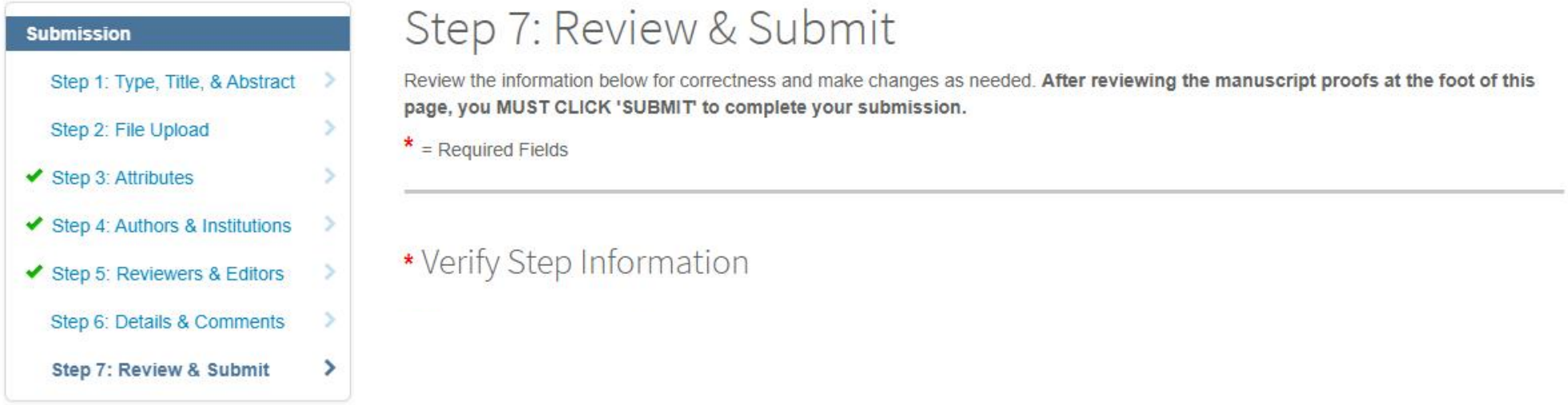
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一、投稿

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一、投稿

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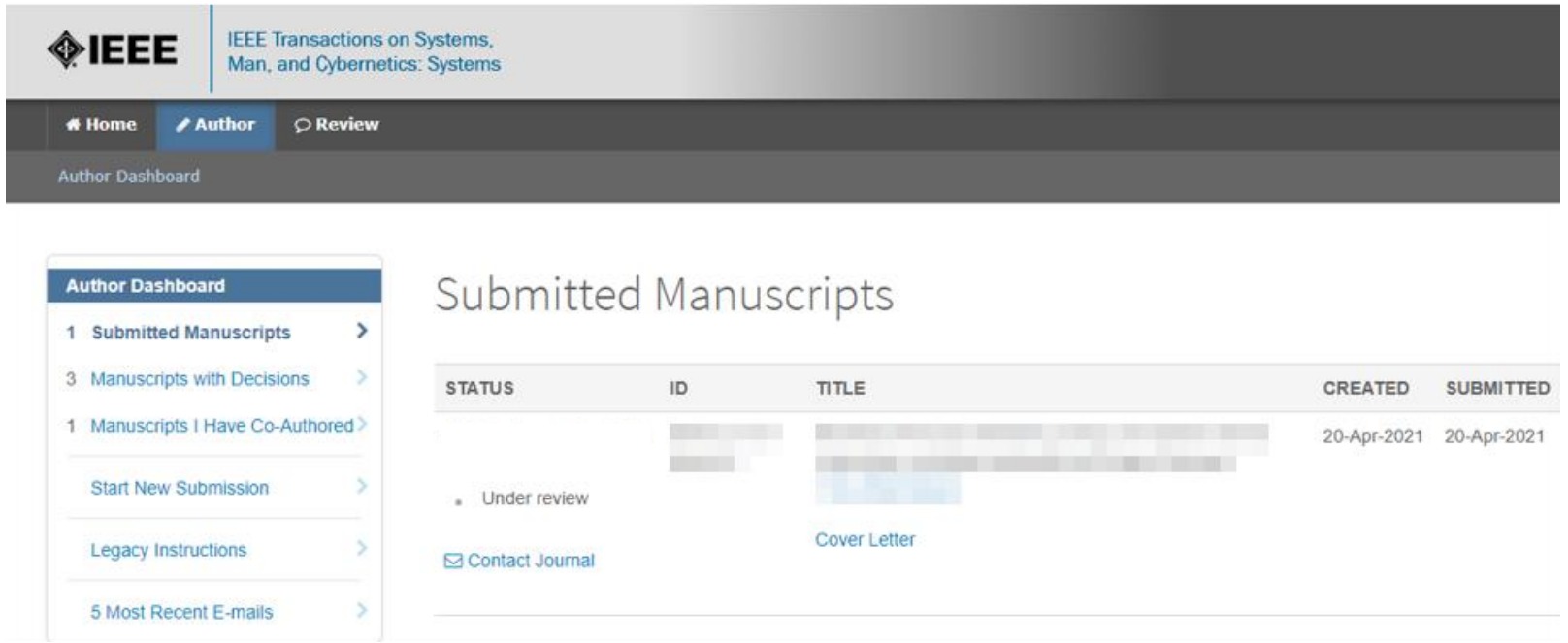
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一、投稿

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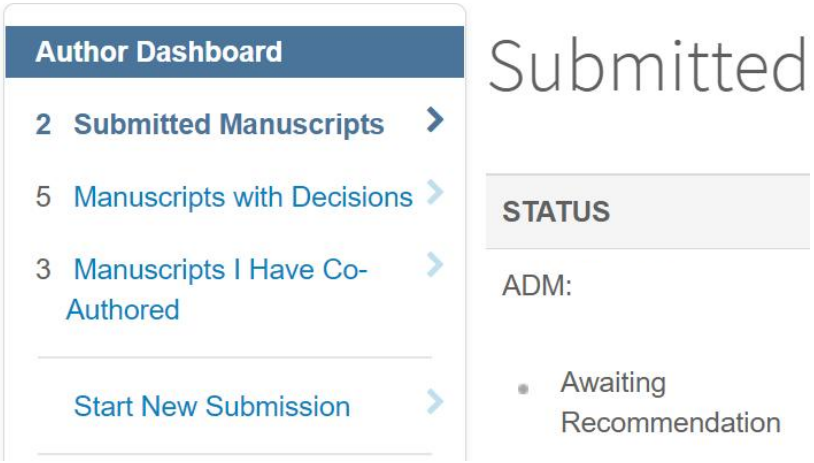
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提纲

一 投稿

二 审稿

三 回复

四 其他

二、审稿

➢ 重要人物

- First author
- Corresponding author
- Others

- EIC： Editors in Chief

  主编，权力最大
- AE：Associate Editors

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- ADM：Administrator

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审稿人

二、审稿

- 投稿-被拒

二、审稿

➢ 投稿-被拒

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Industrial Informatics (TII). Although your manuscript is of interest and technical merit, I regret to inform you that we will not be able to consider your manuscript in its present form for TII.

In order to deal with the large number of submissions to TII in a timely manner, all the manuscripts we receive are initially screened by the Editor-in-Chief and/or Associate Editors. Given the fact that TII can publish only a small fraction of the manuscripts received each year, we decide carefully through an early stage of the reviewing process which papers are likely to be suitable for publishing in TII after comprehensive peer-review.

The paper is not suitable for TII.

We understand you may be disappointed by this decision, but hope that our rapid response will enable you to pursue other options without undue delay.

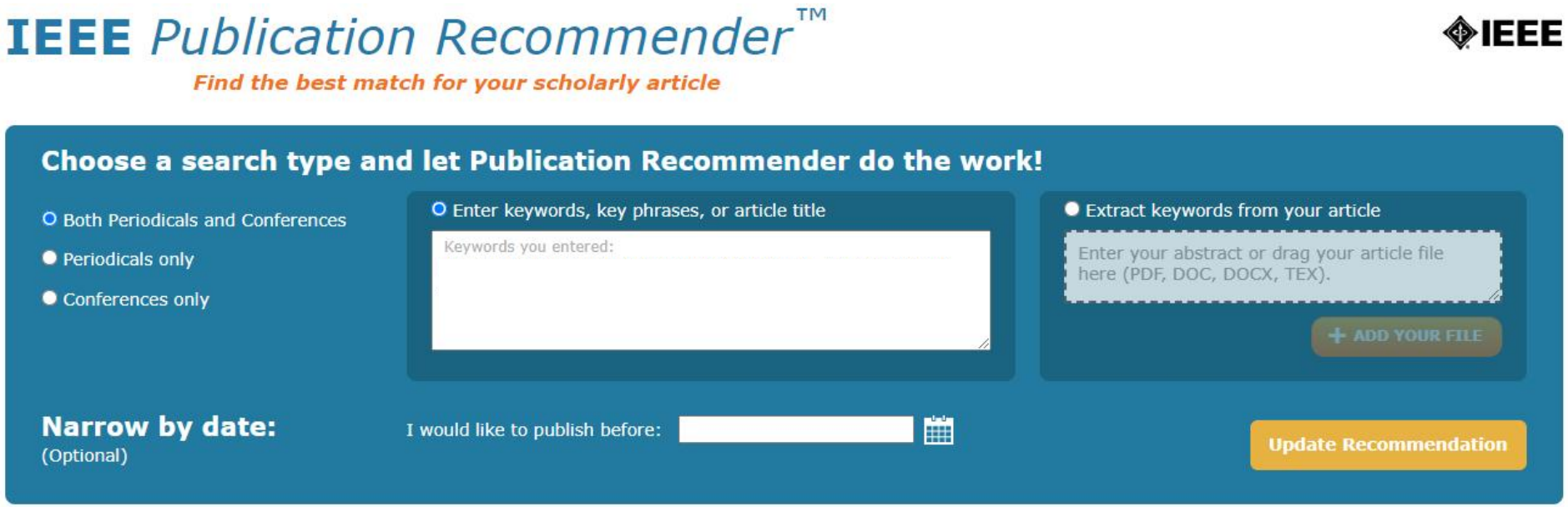
Thank you again for the opportunity for us to read your manuscript. We hope that you will consider submitting your work to TII again in the future.

With kind regards,

Prof. Ren C. Luo
Editor-in-Chief

二、审稿

➢ 投稿-被拒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二、审稿

➢ 投稿-被拒

Periodicals: (100 results) **Sort By:** Keyword Match (relevance)

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Industry Applications, IEEE Transactions on	Open Access Available	3.654	27.3 Weeks
IEEE Control Systems Letters	Open Access Available	Not yet available	13.6 Weeks
Cybernetics, IEEE Transactions on	Open Access Available	11.448	35.6 Weeks
Automatic Control, IEEE Transactions on	Open Access Available	5.792	31.6 Weeks
Signal Processing, IEEE Transactions on	Open Access Available	4.931	36.8 Weeks

Conferences: (214 results) **Sort By:** Keyword Match (relevance) SHOW MAP

Title | Location	Country	Abstract Submission Deadline	Conference Date
2022 7th International Conference on Computational Intelligence and Applications (ICCIA) **Location:** Nanjing Tech University, ollege of Electrical Engineering and Control Science, Nanjing, China	China		24-26 Jun 2022

二、审稿

➢ 投稿-送审-被拒

Publication decision on Version 1 — May 4, 2021 07:17:21 Pacific Time	
Decision	Reject - may not be resubmitted
Cover message	I regret to inform you that based on these reviews and the advice of the Associate Editor concerned, the decision is to reject your paper. The essential reasons for this decision are given in the report by the associate editor. I should, of course, like to thank you for submitting your paper to Automatica. Sincerely yours Torsten Soderstrom
Report	The manuscript has been evaluated by three reviewers. Two of them are very critical. The main reason appears to be the writing quality and presentation of the results which demands a complete rewriting of the paper to be further considered for publication. Moreover, the superiority of the proposed approach was not verified nor demonstrated throughout the manuscript. In conclusion, the work may contain publishable material but the paper requires a total rewriting and reorganization that goes, in my opinion, beyond the "reject provisionally".

二、审稿

- 投稿-送审-大修-被拒

科研　论文　期刊论文

第一篇论文多次被拒稿是什么体验?

后续：第一篇改投两次后中了，第二篇改投两次后拟录用，可以毕业了，但是始终还没尝试过投论文“一发入魄”的酸爽。不过说实话，慢慢的，也开始了解学术圈子里面...显示全部

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- 20-Jan-2021：Submit
- 26-Mar-2021：Major Revision
- 07-May-2021：Resubmit
- 08-Jun-2021：Reject & Resubmit
- 27-Jun-2021：Resubmit
- 17-Sep-2021：Major Revision
- 29-Sep-2021：Resubmit
- 14-Oct-2021：Accept

ACTION	STATUS	ID	TITLE	SUBMITTED	DECISIONED
Copyright transferred on 18-Oct-2021	EIC: Luo, Ren ADM: Jess, Lisa • Accept (14-Oct-2021) view decision letter Contact Journal			29-Sep-2021	14-Oct-2021
a revision has been submitted (TII-21-2666.R1)	EIC: Luo, Ren ADM: Jess, Lisa • Major Revision (17-Sep-2021) • a revision has been submitted view decision letter Contact Journal			27-Jun-2021	17-Sep-2021
a resubmission has been submitted (TII-21-2666)	EIC: Luo, Ren ADM: Jess, Lisa • Reject & Resubmit (08-Jun-2021) • a resubmission has been submitted view decision letter Contact Journal			07-May-2021	08-Jun-2021
a revision has been submitted (TII-21-0239.R1)	EIC: Luo, Ren ADM: Jess, Lisa ADM: Luo, Ren • Major Revision (26-Mar-2021) • a revision has been submitted view decision letter Contact Journal			20-Jan-2021	26-Mar-2021

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- 08-Jun-2021：Reject & Resubmit
- 27-Jun-2021：Resubmit
- 17-Sep-2021：Major Revision
- 29-Sep-2021：Resubmit
- 14-Oct-2021：Accept

Manuscript received March 30, 2020; accepted April 12, 2020. Date of publication April 15, 2020; date of current version December 21, 2020. This

Manuscript received September 29, 2021; revised November 6, 2021; accepted November 10, 2021. Date of publication November 18, 2021; date of current version January 24, 2022. This work was supported in part by the

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- 27-Jun-2021：Resubmit
- 17-Sep-2021：Major Revision
- 29-Sep-2021：Resubmit
- 14-Oct-2021：Accept

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二、审稿

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Summary of Evaluation

- ○ Excellent
- ○ Good
- ○ Fair
- ○ Poor

Referee Report for Author							
Organization	(Poor)	○ 1	○ 2	○ 3	○ 4	○ 5	(Excellent)
Clarity	(Low)	○ 1	○ 2	○ 3	○ 4	○ 5	(High)
Length	(Too Long)	○ 1	○ 2	○ 3	○ 4	○ 5	(Too Short)
References	(Incomplete)	○ 1	○ 2	○ 3	○ 4	○ 5	(Adequate)
Correctness	(Incorrect)	○ 1	○ 2	○ 3	○ 4	○ 5	(Correct)
Significance	(Low)	○ 1	○ 2	○ 3	○ 4	○ 5	(High)
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Attachments	(Unnecessary)	○ 1	○ 2	○ 3	○ 4	○ 5	(Helpful)
If Survey Coverage	(Shallow)	○ 1	○ 2	○ 3	○ 4	○ 5	(Broad)
Contribution	(No New Results)	○ 1	○ 2	○ 3	○ 4	○ 5	(Significant)

二、审稿

➢ 审稿内容

What are the contributions of the paper?

What are the additional ways in which the paper could be improved?

Confidential Comments to the Editor

ΩSpecial Characters

Comments to the Author

ΩSpecial Characters

二、审稿

➢ 审稿内容

Recommendation

- ○ Accept
- ○ Accept With Minor Changes
- ○ Prepare A Major Revision
- ○ Reject & Resubmit
- ○ Reject

二、审稿

➢ 审稿意见(EIC)

Dear XXX:

Manuscript ID … entitled …which you submitted to the …, has been reviewed.

The Associate Editor and Reviewers have recommended publication, but also suggest some minor revisions to your manuscript. Therefore, I invite you to respond to the Reviewers' Comments, included at the bottom of this letter, and revise your manuscript accordingly

Once again, thank you for submitting your manuscript to the … and we look forward to receiving your revision.

Sincerely,
Editor-in-Chief

二、审稿

➢ 审稿意见(AE)

Comments to the Author:

Four reviewers' reports were collected on this manuscript, two major revisions and two minor revisions. All of them raised several technical issues which should be addressed during the next revision. Considering the recommendations of the reviewers as well as my own reading and analysis, the authors should prepare a full revision of this paper taking all the above comments into account.

二、审稿

➢ 审稿意见(Reviewers)

Reviewer: 1

Comments to the Author
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general, this paper is well writ
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Based on the comments abov

Reviewer: 2

Comments to the Author
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6) Interesting equations and deri
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7) How the monitoring strategy v
8) Flowchart of the TE process is
this flowchart is extracted?
9) Monitoring performance for fa
10) To increase the validity of the
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11) Conclusion is without any nu
12) Reference part can be improv

Reviewer: 3

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Reviewer: 4

Comments to the Author
(There are no comments. Ple

提纲

一 投稿

二 审稿

三 回复

四 其他

三、回复

➢ 审稿意见

- 点对点
- 每一点都要在文章上有体现

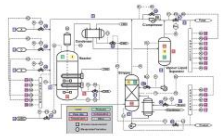


Fig. 3. Flowchart of the TE process.

where the F distribution depends on the degrees of freedom $r, n-r$ and the significance level α. Once the control limit is estimated, the detection logic can be determined by

$$\begin{cases} \mathrm{T}^2 > J_{th,\mathrm{T}^2} \Rightarrow \text{faulty}, \\ \mathrm{T}^2 \le J_{th,\mathrm{T}^2} \Rightarrow \text{fault-free}, \end{cases} \quad (18)$$

which shows that when T^2 statistic exceeds the control limit, there occurs a fault, otherwise, there exists no fault. Following a similar as the arguments in [1], the whole monitoring strategy can be summarized in Fig. 2.

V. Simulation Studies

This section will demonstrate the effectiveness and efficacy of the proposed STPCA over PCA, SPCA, and TPCA, on the benchmark Tennessee Eastman (TE) process. It is worth noting that SPCA can include these approaches in [10]–[12].

- **PCA**: $\mu_1 = \mu_2 = 0$;
- **Spatial PCA (SPCA)**: $\mu_2 = 0$;
- **Temporal PCA (TPCA)**: $\mu_1 = 0$.

A. Data Preparation

The TE process is a benchmark database, which has been broadly used to test different PM approaches [18]; please refer to Fig. 3 for the detailed flowchart. In the TE process, a total of 21 fault data sets are collected, each of which has a training set with 480 samples and a testing set with 960 samples. Moreover, a fault has been introduced to the testing set at the 161st sample. In addition, each data set has 52 variables, including 22 process variables, 19 analysis variables, and 11 manipulated variables.

In this study, we choose 33 variables (22 process variables and 11 manipulated variables) as suggested in [10]. Since fault Nos. 3, 9, 15, 21 are relatively difficult for data-driven PM monitoring approaches, thus these faults are not considered here. It is admitted that, choosing a proper regularization parameter is not a trivial task. For the compared SPCA, TPCA, and STPCA, parameters λ, μ_1, μ_2 are selected using five-fold cross-validation and then fixed in the optimization procedure. In order to measure the monitoring performance, two probability indicators, i.e., fault detection rate (FDR) and false alarm rate (FAR), are defined as follows

$$\begin{aligned} \mathrm{FDR} &= \mathrm{prob}(\mathrm{T}^2 > J_{th,\mathrm{T}^2} \mid f \neq 0), \\ \mathrm{FAR} &= \mathrm{prob}(\mathrm{T}^2 > J_{th,\mathrm{T}^2} \mid f = 0). \end{aligned} \quad (19)$$

TABLE I
Monitoring results of PCA, SPCA, TPCA, and STPCA.

No.	PCA		SPCA		TPCA		STPCA	
	FDR	FAR	FDR	FAR	FDR	FAR	FDR	FAR
1	99.13	0.63	99.25	0.63	99.13	0.00	**99.25**	**0.00**
2	98.38	0.63	98.38	0.63	98.38	0.63	**98.38**	**0.63**
4	20.88	1.25	27.63	0.63	29.75	0.63	**37.63**	**0.00**
5	24.13	1.88	26.75	0.63	25.50	0.63	**32.50**	**0.00**
6	99.13	1.25	99.13	1.25	99.13	0.63	**99.13**	**0.63**
7	100	1.25	100	0.63	100	0.63	**100**	**0.00**
8	96.88	0.63	96.88	0.63	97.50	0.63	**97.50**	**0.00**
10	29.63	0.63	32.63	0.00	33.75	0.00	**37.88**	**0.00**
11	40.63	2.50	43.75	1.88	42.88	1.25	**49.63**	**1.25**
12	98.38	1.25	98.75	0.63	99.13	0.63	**99.50**	**0.63**
13	93.63	0.00	93.63	0.00	93.63	0.00	**93.63**	**0.00**
14	99.25	1.25	99.25	0.63	99.50	0.63	**99.75**	**0.63**
16	13.50	1.88	14.13	1.25	15.25	1.88	**16.50**	**1.25**
17	76.25	2.50	77.50	1.88	77.13	1.25	**83.13**	**0.63**
18	89.25	2.50	89.88	1.25	89.88	1.88	**90.25**	**1.25**
19	14.13	0.63	16.75	0.00	1563	0.63	**17.50**	**0.00**
20	31.75	1.25	37.63	1.25	36.50	0.63	**41.63**	**0.63**

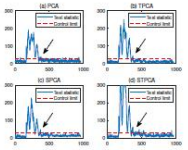


Fig. 4. Monitoring performance for fault No. 5 in the TE process.

B. Monitoring Performance

Table I lists the fault detection rate (FDR) and false alarm rate (FAR) values achieved by the comparison PM approaches. Moreover, the monitoring results of the proposed STPCA are marked in bold. It can be easily concluded that all FAR values are low, which illustrates that the PCA-based PM approaches are capable of detecting false alarms. Compared with PCA, all its variants, i.e., SPCA, TPCA, and STPCA, have larger FDR values, which illustrates that the graph prior is beneficial for PM because it can maintain the latent structure of processes. Furthermore, the performance of STPCA is better than or as good as SPCA. Even for some difficult situations, such as fault No. 20, the increase is still positive, which illustrates that the temporal graph prior is helpful for monitoring processes. The reason behind is that the local geometric manifold structure of fault samples can be captured and preserved, thereby making the monitoring more robust to corruptions.

In order to visualize the monitoring performance, the T^2 test statistic of faults No. 5 and No. 10 are displayed in Fig. 4 and Fig. 5, respectively. For fault No. 5, the fault can be recognized at the 161st sample but cannot be detected continuously. In comparison, the proposed STPCA can still achieve outstanding monitoring results, that is, numbers that violated the control limit between 300-500 samples. For fault No. 10, although the data set has 52 variables, however in this study we remove 19 analysis variables sampled less frequently and only choose the other 33 variables. Since faults IDV(3), IDV(9), IDV(15), and IDV(21) are relatively difficult for data-driven PM monitoring approaches, thus these faults are not considered here.

It is admitted that choosing a proper regularization parameter is not a trivial task. For the compared SPCA, TPCA, and STPCA, parameters λ, μ_1, μ_2 are selected using five-fold cross-validation and then fixed in the optimization procedure. To measure the monitoring performance, two probability indicators, i.e., fault detection rate (FDR) and false alarm rate (FAR), are defined as $\mathrm{FDR} = \mathrm{prob}(\mathrm{T}^2 > J_{th,\mathrm{T}^2} \mid f \neq 0)$ and $\mathrm{FAR} = \mathrm{prob}(\mathrm{T}^2 > J_{th,\mathrm{T}^2} \mid f = 0)$. A higher FDR value or lower FAR value implies better monitoring performance. The FDR value is 100% if all faulty samples are detected, while the FAR value is 0% if all fault-free samples are not alarmed.

B. Monitoring Strategy

Following a similar line as the arguments in [1], the whole monitoring strategy contains offline modeling and online monitoring, which can be summarized as follows.

1) Data Normalization: To begin with, the modeling data $\mathbf{X}$ and monitoring data $\mathbf{Y}$ should be normalized to eliminate the influence of measurement units.

2) Noise Reduction: After solving the proposed STPCA in (2), the modeling data $\mathbf{X}$ is decomposed into a low-rank component $\mathbf{A}$ plus a sparse component $\mathbf{E}$, where $\mathbf{A}$ reflects the clean process information and $\mathbf{E}$ reflects the random noise. Unlike the classical PCA, SVD is performed on matrix $\mathbf{A}$ as

$$\mathbf{A} = \mathbf{U}\mathbf{\Sigma}\mathbf{V}^\top, \quad (15)$$

where $\mathbf{\Sigma}$ is the singular matrix and $\mathbf{V}$ is the loading matrix.

3) Control Limit Determination: The corresponding control limit for T^2 statistic can be estimated by

$$J_{th,\mathrm{T}^2} = \frac{r(n^2-1)}{n(n-r)} F_\alpha(r, n-r), \quad (16)$$

where the F distribution depends on the degrees of freedom $r, n-r$ and the significance level α.

4) Test Statistic Calculation: Denote $\mathbf{W} = \mathbf{\Sigma}^\top \mathbf{\Sigma}$ be the variance matrix of PCs, then the T^2 statistic can be applied to monitor the process, which is defined as

$$\mathrm{T}_i^2 = \mathbf{y}_i \mathbf{V} \mathbf{W}^{-1} \mathbf{V}^\top \mathbf{y}_i^\top, \quad (17)$$

where $\mathbf{y}_i$ is the ith sample of monitoring data $\mathbf{Y}$.

5) Online Monitoring: Once the control limit is determined, the detection logic can be checked by

$$\begin{cases} \mathrm{T}^2 > J_{th,\mathrm{T}^2} \Rightarrow \text{faulty}, \\ \mathrm{T}^2 \le J_{th,\mathrm{T}^2} \Rightarrow \text{fault-free}. \end{cases} \quad (18)$$

C. Monitoring Performance

The monitoring performance for faults IDV(5) and IDV(10) are shown in Fig. 3 and Fig. 4, respectively. For fault IDV(5), the fault can be detected at the 161st sample but cannot be detected continuously. In comparison, the proposed STPCA can still achieve outstanding monitoring results; see the numbers that violated the control limit between 350-400 samples. For fault IDV(10), all mentioned PCA-based approaches fail to detect it at the 161st sample. However, after a few samples, the fault can be detected to a certain extent, but the monitoring performance is unstable. In contrast, STPCA can achieve better monitoring results; see samples around 600 in Fig. 4. Actually, this superiority can be attributed to the spatiotemporal prior, which has strong potential in PM.

Table I reports the achieved FDR and FAR values for the selected faults in the TE process. Moreover, the monitoring results of the proposed STPCA are indicated in bold. It can be easily concluded that faults IDV(1), IDV(2), IDV(7), IDV(8), IDV(12), IDV(13), and IDV(14) are relatively easy to detect for all approaches since their FDR values are more than 90%. In particular, the FDR value of fault IDV(7) is 100%, which means that this fault can be successfully detected. Compared with the classical PCA, all its variants, i.e., SPCA, TPCA, and STPCA, obtain larger FDR values, which illustrates that the graph prior is beneficial for PM as it preserves the latent structure of processes. Furthermore, the performance of the proposed STPCA is better than or as good as others. Even for some difficult situations, such as fault IDV(20), the increase is still positive, which validates that the temporal graph prior is helpful for monitoring processes. The reason behind is that

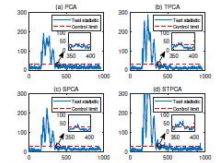


Fig. 3. Monitoring performance for fault IDV(5) in the TE process: (a) PCA, (b) SPCA, (c) TPCA, and (d) STPCA.

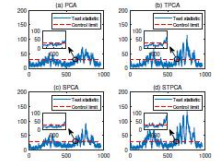
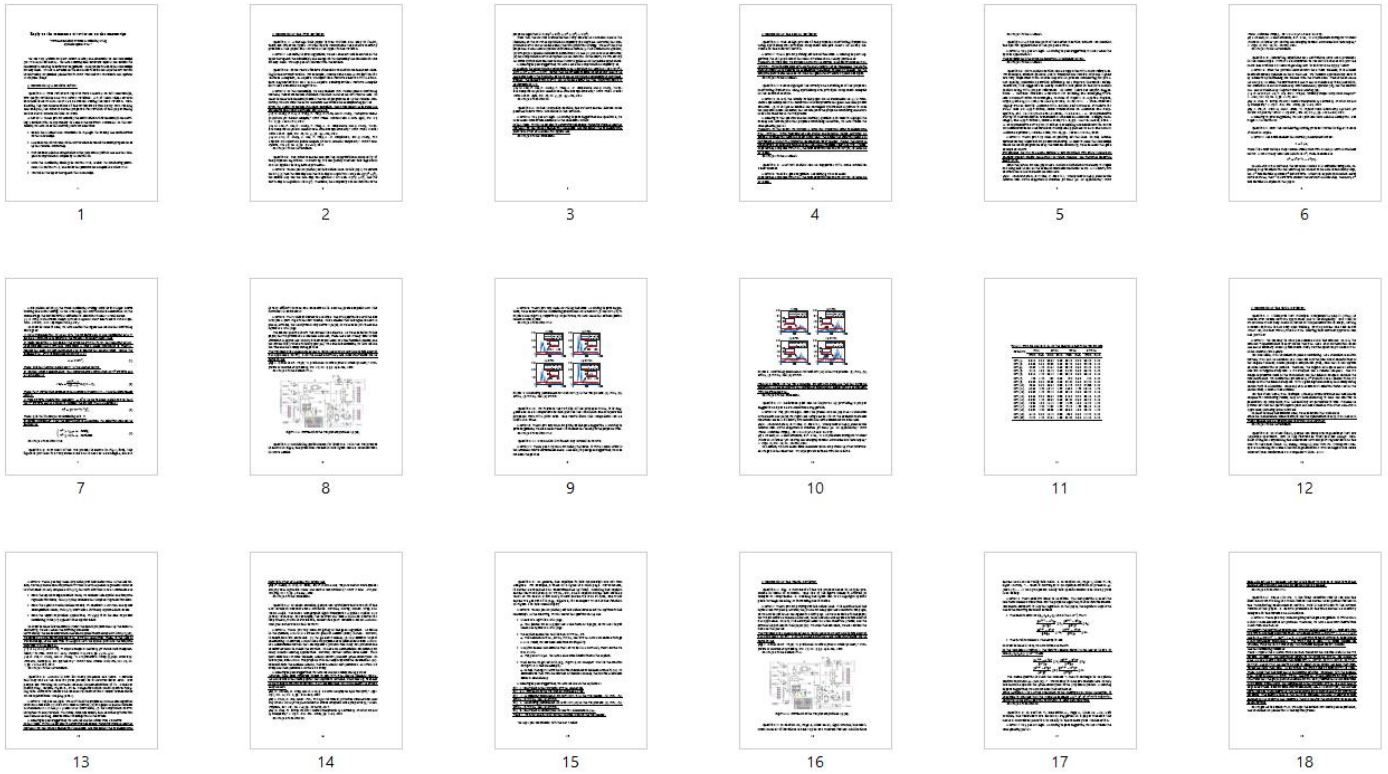


Fig. 4. Monitoring performance for fault IDV(10) in the TE process: (a) PCA, (b) SPCA, (c) TPCA, and (d) STPCA.

三、回复

➢ 审稿意见

- 点对点
- 每一点都要在文章上有体现
- 不要嫌多，不要嫌简单，不要嫌重复
- 争取不要让审稿人再看文章，避免不必要的麻烦



三、回复

➢ 例子

Reply to the comments of reviewers on the manuscript

Title

We are very grateful for your careful reading and comments on our manuscript (ID: TCAS-II-12272-2021). We have carefully read reviewers' reports and revised the manuscript according to reviewers' suggestions. Changes are in blue in the manuscript for easy check. We have addressed all the comments in detail and hope the new version is satisfactory for possible publication in *IEEE Transactions on Circuits and Systems II: Express Briefs*.

三、回复

➢ 例子

♯ **Comments by Associate Editor:**

Question 1: Four reviewers' reports were collected on this manuscript, two major revisions and two minor revisions. All of them raised several technical issues which should be addressed during the next revision. Considering the recommendations of the reviewers as well as my own reading and analysis, the authors should prepare a full revision of this paper taking all the above comments into account.

Answer 1: Thank you for affirming the contribution of this manuscript and allowing a revision with an opportunity to address the reviewers' comments. In this new version, we have made the following main modifications:

- Revise the Abstract and Conclusion to highlight the novelty and contributions of this manuscript.
- Add some recent references in the Introduction to reflect the recent progress made by the research community.

三、回复

➢ 例子

♯ **Comments by the First Reviewer:**

Question 1: Although this paper is well written and easy to follow, there are still some typos. I would like to recommend the authors carefully proofread this paper and correct all the typos in the revision.

Answer 1: According to your suggestions, we have done our best to correct all the typos throughout the manuscript, and changes in the manuscript are indicated in blue for easy check. We hope you are satisfied with the revision.

Question 2: Some related feature dimension reduction methods are missing in the current version. For example, "Compound Rank-k Projections for Bilinear Analysis", "Adaptive Unsupervised Feature Selection With Structure Regularization" and "An Adaptive Semisupervised Feature Analysis for Video Semantic Recognition".

Answer 2: In this manuscript, we only consider PCA-related process monitoring methods, thus some feature dimension reduction methods are not referred here. In

三、回复

➢ 可能会遇到的问题

◘ 直接说没意义

♯ Comments by Third Reviewer:

Question: The topic of robust PCA/PLS has been beaten to death and is not something new - as the authors claim. A comprehensive review article in this regard is:

Robust partial least squares regression: Part I. algorithmic developments, Journal of Chemometrics 22(1) 1-13, 2008.

The works by Hubert and Rousseeuw as well as Stahel and Donoho produced early approaches/estimators for PCA models that are robust to outliers. In comparison, the submitted article does not review any of these works and does not add anything different to what existing body of work. Concerning to me is also that the reviewed literature was predominantly produced by authors of a specific geographic location, which is not a true reflection of the efforts made by the research community and professionally unacceptable.

三、回复

➢ 可能会遇到的问题

- 直接说没意义

三、回复

➢ 可能会遇到的问题

□ 这可能是幸运

Joint Sparsity Constrained Canonical Correlation Analysis with Application to Fault Detection ⋆

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Abstract

Canonical correlation analysis (CCA) has attracted much attention due to its effectiveness in exploring the relationship across multi-view data. However, most of the variants of CCA ignore the similarity information belonging to the same group and can not determine the number of canonical variables. To overcome these drawbacks, in this paper, a novel joint sparsity constrained canonical correlation analysis (JSCCCA) model is proposed. Instead of considering $L_{2,1}$-norm regularization, $L_{2,0}$-norm joint sparse constraint is integrated into CCA. Technically, by taking advantage of the $L_{2,0}$-norm constrained optimization, JSCCCA can improve the interpretability of canonical variables and accurately control the selected variables. In the proposed approach, an effective alternating minimization algorithm (AMA) using iterative hard thresholding and manifold constrained gradient descent is proposed. In theory, it is proved that any accumulation point of the sequence generated by AMA can converge to a stationary point with finite iterations. Finally, some experimental studies and comparative evaluation are conducted on an important application in engineering, i.e., fault detection, to illustrate the efficiency of the proposed method. To the best of our knowledge, this is the first work to integrate the $L_{2,0}$-norm joint sparse constraint into a CCA framework.

Key words: Canonical correlation analysis (CCA); $L_{2,0}$-norm; joint sparsity constrained canonical correlation analysis (JSCCCA); alternating minimization algorithm (AMA); fault detection.

1 Introduction

Recent years have witnessed a growing interest in learning representations from multi-view data. For example, face images of a person in different poses and lighting conditions indicate the identity. Therefore, integrating all the multi-view data will contribute to a better understanding because each view provides different but complementary information (Miao, Yu, Ji and Zhou (2019); Hardoon, Szedmak and Shawe-Taylor (2004); Sun (2013)). To improve the representation, different types of multi-view learning methods have been proposed. For instance, canonical correlation analysis (CCA), bilinear model (BLM), partial least square (PLS), and deep neural networks. Despite the aforementioned methods, CCA is still one of the most impressive methods, and it is extensively applied in the fields such as pattern analysis, machine learning, signal processing, biomedical science, and industrial electronics.

Even though CCA has the capability of conducting multi-view feature selection, it still has some limitations. In high-dimensional settings, each view may be redundant, which means that not all variables in the original space are identically informative for interpreting the canonical variables. In this case, if the learned canonical loadings are not potentially sparse or selective, it will be difficult to obtain a consistent common representation with promising discriminability, which inspired many researchers to propose different variants of CCA. Generally speaking, the extensions can be sorted into three categories: discriminative CCA (Sun, Xie and Yang (2015)), Deep CCA (Andrew, Arora, Bilmes and Livescu (2013)), and sparse CCA (SCCA) (Xu, Zhu, Zhang, Zhao and Li (2020)). Compared with the first two categories, SCCA is frequently investigated

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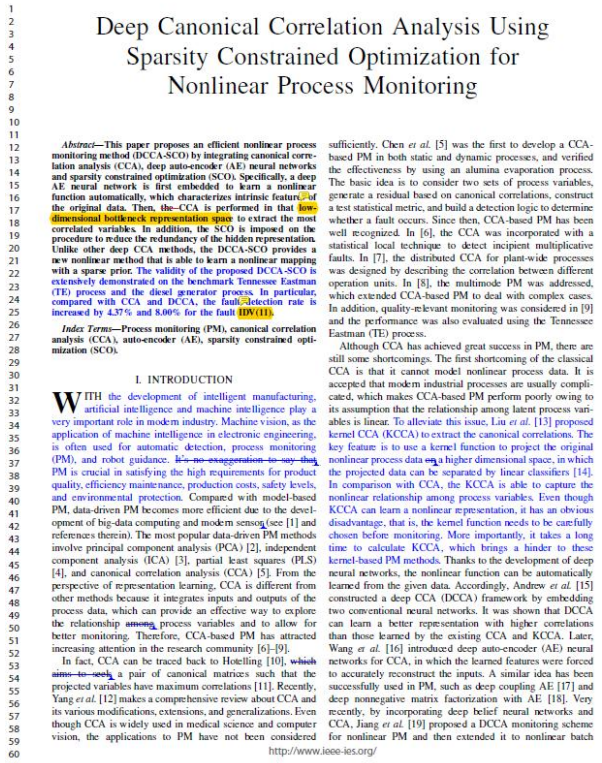
Preprint submitted to Automatica 4 February 2021



Deep Canonical Correlation Analysis Using Sparsity Constrained Optimization for Nonlinear Process Monitoring

Abstract—This paper proposes an efficient nonlinear process monitoring method (DCCA-SCO) by integrating canonical correlation analysis (CCA), deep auto-encoder (AE) neural networks and sparsity constrained optimization (SCO). Specifically, a deep AE neural network is first embedded to learn a nonlinear function automatically, which characterizes intrinsic feature of the original data. Then, the CCA is performed in that low-dimensional bottleneck representation space to extract the most correlated variables. In addition, the SCO is imposed on the procedure to reduce the redundancy of the hidden representation. Unlike other deep CCA methods, the DCCA-SCO provides a new nonlinear method that is able to learn a nonlinear mapping with a sparse prior. The validity of the proposed DCCA-SCO is extensively demonstrated on the benchmark Tennessee Eastman (TE) process and the diesel generator process. In particular, compared with CCA and DCCA, the fault detection rate is increased by 4.37% and 8.00% for the fault IDV(11).

Index Terms—Process monitoring (PM), canonical correlation analysis (CCA), auto-encoder (AE), sparsity constrained optimization (SCO).

I. INTRODUCTION

WITH the development of intelligent manufacturing, artificial intelligence and machine intelligence play a very important role in modern industry. Machine vision, as the application of machine intelligence in electronic engineering, is often used for automatic detection, process monitoring (PM), and robot guidance. It's no exaggeration to say that PM is crucial in satisfying the high requirements for product quality, efficiency maintenance, production costs, safety levels, and environmental protection. Compared with model-based PM, data-driven PM becomes more efficient due to the development of big-data computing and modern sensors (see [1] and references therein). The most popular data-driven PM methods involve principal component analysis (PCA) [2], independent component analysis (ICA) [3], partial least squares (PLS) [4], and canonical correlation analysis (CCA) [5]. From the perspective of representation learning, CCA is different from other methods because it integrates inputs and outputs of the process data, which can provide an effective way to explore the relationship among process variables and to allow for better monitoring. Therefore, CCA-based PM has attracted increasing attention in the research community [6]–[9].

In fact, CCA can be traced back to Hotelling [10], which aims to seek a pair of canonical matrices such that the projected variables have maximum correlations [11]. Recently, Yang *et al.* [12] makes a comprehensive review about CCA and its various modifications, extensions, and generalizations. Even though CCA is widely used in medical science and computer vision, the applications to PM have not been considered sufficiently. Chen *et al.* [5] was the first to develop a CCA-based PM in both static and dynamic processes, and verified the effectiveness by using an alumina evaporation process. The basic idea is to consider two sets of process variables, generate a residual based on canonical correlations, construct a test statistical metric, and build a detection logic to determine whether a fault occurs. Since then, CCA-based PM has been well recognized. In [6], the CCA was incorporated with a statistical local technique to detect incipient multiplicative faults. In [7], the distributed CCA for plant-wide processes was designed by describing the correlation between different operation units. In [8], the multimode PM was addressed, which extended CCA-based PM to deal with complex cases. In addition, quality-relevant monitoring was considered in [9] and the performance was also evaluated using the Tennessee Eastman (TE) process.

Although CCA has achieved great success in PM, there are still some shortcomings. The first shortcoming of the classical CCA is that it cannot model nonlinear process data. It is accepted that modern industrial processes are usually complicated, which makes CCA-based PM perform poorly owing to its assumption that the relationship among latent process variables is linear. To alleviate this issue, Liu *et al.* [13] proposed kernel CCA (KCCA) to extract the canonical correlations. The key feature is to use a kernel function to project the original nonlinear process data on a higher dimensional space, in which the projected data can be separated by linear classifiers [14]. In comparison with CCA, the KCCA is able to capture the nonlinear relationship among process variables. Even though KCCA can learn a nonlinear representation, it has an obvious disadvantage, that is, the kernel function needs to be carefully chosen before monitoring. More importantly, it takes a long time to calculate KCCA, which brings a hinder to these kernel-based PM methods. Thanks to the development of deep neural networks, the nonlinear function can be automatically learned from the given data. Accordingly, Andrew *et al.* [15] constructed a deep CCA (DCCA) framework by embedding two conventional neural networks. It was shown that DCCA can learn a better representation with higher correlations than those learned by the existing CCA and KCCA. Later, Wang *et al.* [16] introduced deep auto-encoder (AE) neural networks for CCA, in which the learned features were forced to accurately reconstruct the inputs. A similar idea has been successfully used in PM, such as deep coupling AE [17] and deep nonnegative matrix factorization with AE [18]. Very recently, by incorporating deep belief neural networks and CCA, Jiang *et al.* [19] proposed a DCCA monitoring scheme for nonlinear PM and then extended it to nonlinear batch

做一个合格的审稿人！

三、回复

- If Accepted!

那美过天空，包括一切美的事物到底是什么！

提纲

一 投稿

二 审稿

三 回复

四 其他

四、其他

The Most Common Habits from more than 200 English Papers written by Graduate Chinese Engineering Students

By Felicia Brittman

This paper presents some of the most common Chinese-English habits observed from over two hundred English technical papers by Chinese writers. The habits are explained and in most cases, example text from an actual paper is given along with preferred text. An attempt is made to explain how to correct and prevent such mistakes. In some cases a possible explanation of why the habit occurs is also given. This paper can serve as an individual guide to editing technical papers especially when a native English-speaking editor is unavailable.

四、其他

➢ 缺少a/an/the

- Incorrect： Figure 2 shows the distribution of relative velocity on surface of main and splitter blades.
- Correct： Figure 2 shows the distribution of relative velocity on the surface of the main and splitter blades.

四、其他

➢ 避免使用长句

- Very long sentences are especially common in Chinese-English writing because the writers often translate directly from Chinese to English. Although, in Chinese writing it is acceptable to put several supporting ideas in on sentence to show their relationship, in English, the main idea and each supporting idea is typically written in separate sentences.

四、其他

➢ 避免使用长句

- Too long：The gear transmission is grade seven, the gear gap is 0.00012 radians, the gear gap has different output values corresponding to any given input value, nonlinearity of the gear gap model can be described by using the phase function method, the existing backlash block in the non-linear library of the Matlab/zdimulink toolbox can be used, the initial value of gear gap in the backlash block is set to zero.
- Correct：The gear transmission is grade seven. The gear gap, which is 0.00012 radians, has different output values corresponding to any given input value. The nonlinearity of the gear gap model can be described by using the phase function method. The existing backlash block in the non-linear library of the Matlab/zdimulink toolbox can be used; the initial value of gear gap in the backlash block is set to zero.

四、其他

➢ 勿用目的开头

- Incorrect： For the application in automobile interiors, this paper studies the nesting optimization problem in leather manufacturing.
- Correct：This paper studies the nesting optimization problem in leather manufacturing for application in automobile interiors.

四、其他

➢ 勿用目的开头

- Incorrect： To ensure sheet metal quality as well as assembly quality, CMMs are widely used in automotive industry production.
- Correct： CMMs are widely used in automotive industry production to ensure sheet metal quality as well as assembly quality.

四、其他

➢ 正确使用数字和符号

- Incorrect：12 parameters were selected for the experiment.
- Correct：Twelve parameters were selected for the experiment.

四、其他

➢ 正确使用数字和符号

- Incorrect： If the power battery SOC > SOClo and the driving torque belongs to the middle load,…
- Correct： If the power battery SOC is greater than SOClo and the driving torque belongs to the middle load,…

四、其他

➢ 格式要统一

- Incorrect：Figure.6, Figure6, Fig.6, Tbl10
- Correct：Figure 6, Fig. 6, Tbl. 10

四、其他

- 不要重复

Instead of	Say	Or say
Research work	Research	Work
Limit condition	Limit	condition
Knowledge memory	Knowledge	Memory
Sketch map	Sketch	map
Layout scheme	Layout	scheme
Arrangement plan	Arrangement	plan
Output performance	Output	performance
Simulation results	results	simulation
Knowledge information	Knowledge	information
Calculation results	results	calculation
Application results	Results	Application

四、其他

➢ 更多

- Do not write ‘by this way’. Instead write ‘by doing this’, or ‘using this method’.
- Never write ‘How to…’ at the beginning of a sentence. (Don’t say it ither.)
- Do not write ‘the results are showed as Figure 2’. Do write ‘the results are shown in Figure 2’.
- Refrain from using the word obviously in a technical paper
- Avoid overusing the phrases ‘that is to say’ and ‘namely’. Instead, try to convey your meaning in one sentence.

Q & A