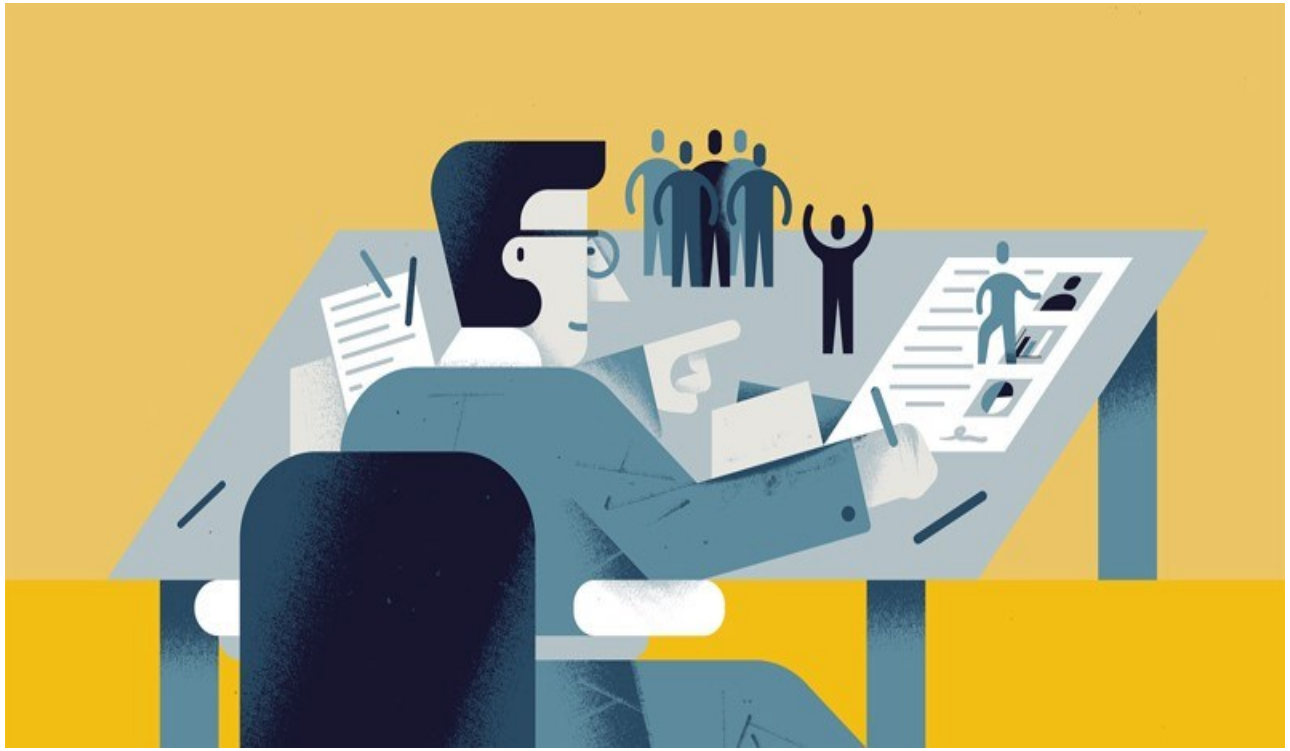
好文章的标准

How to write a first-class paper



Nature **555**, 129-130 (2018)

- **Keep your message clear**

  清晰的信息
- **Create a logical framework**

  正确的逻辑
- **State your case with confidence**

  自信的表达
- **Beware the curse of ‘zombie nouns’**

  生动的语言
- **Prune that purple prose**

  简明的方法
- **Aim for a wide audience**

  广泛的受众

写文章之前的准备

阅读足够的文献

文献是科学研究的生命

文献阅读的三个层次：

第一层次，通过阅读文献了解同行进展，也是学术研究过程中最基本的内容；

第二层次，能够对同行成果进行质量评价，分析判断成果的研究水平；

第三层次，熟悉所在研究方向的国内外代表性团队、存在的科学与技术问题等，是取得重要成果的基础。

参考中国地质大学（武汉）刘庆生老师科学网博客

写文章之前的准备

具备基本的逻辑

与可画竹时，胸中有成竹 - 宋诗人晁补之

写文章之前的准备

选择合适的期刊

Which one should I choose for my paper?

Indexed

Impact

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Scope

Time to First Decision

Peer reviewed

SPRINGER NATURE

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Manuscript title

Manuscript text

Subject area

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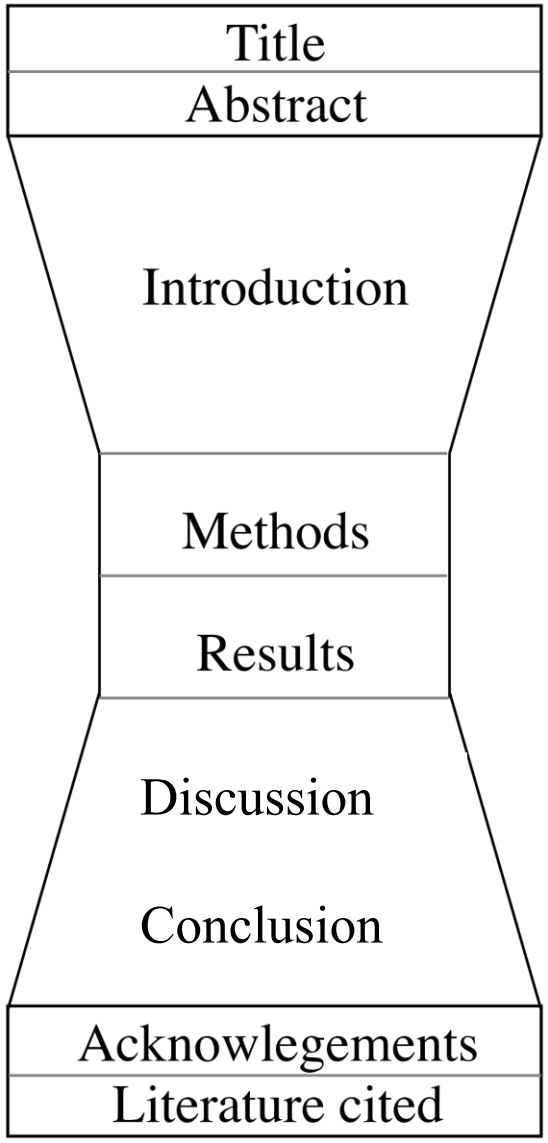
Refine your recommendations

期刊论文的主要组成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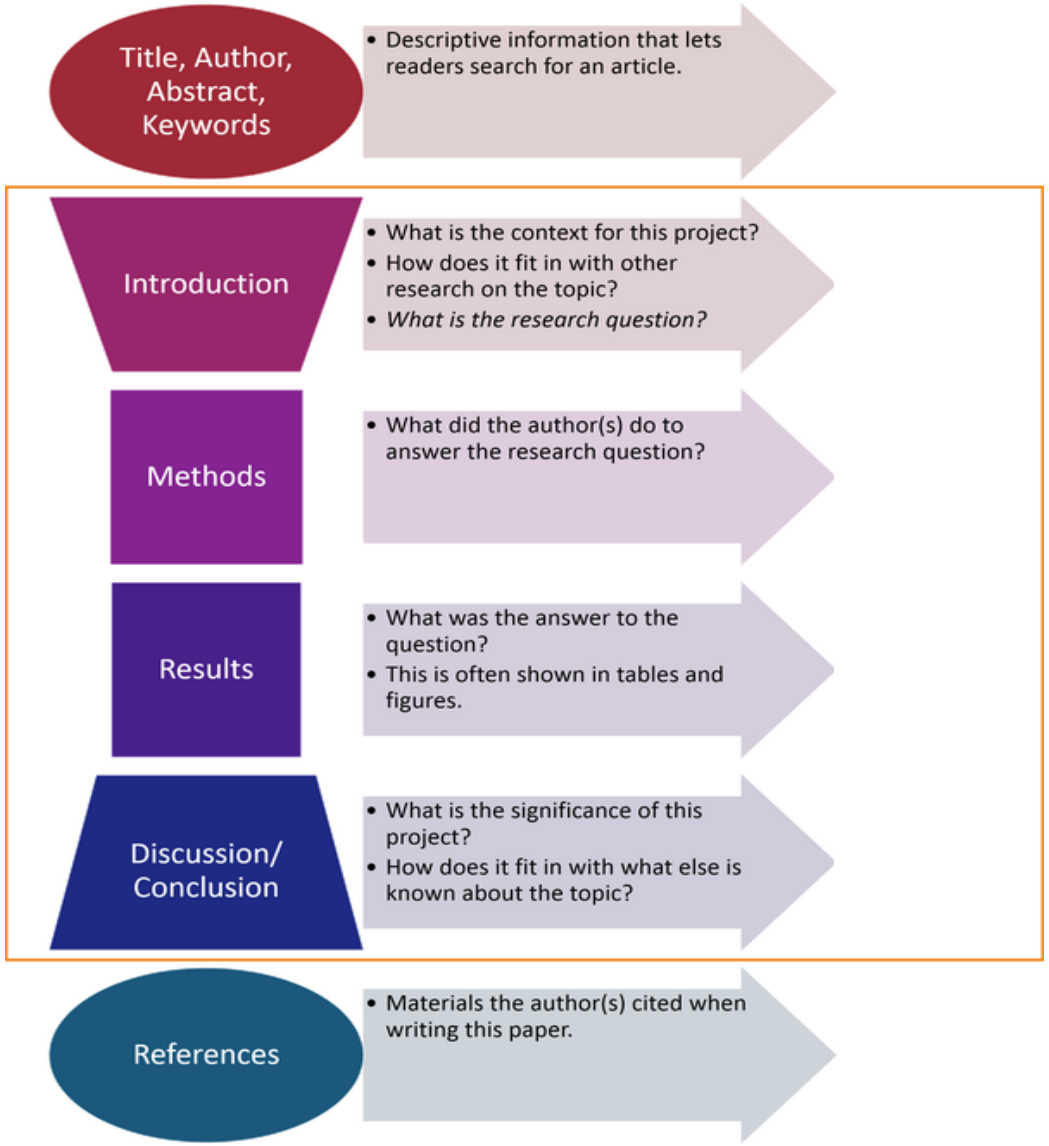
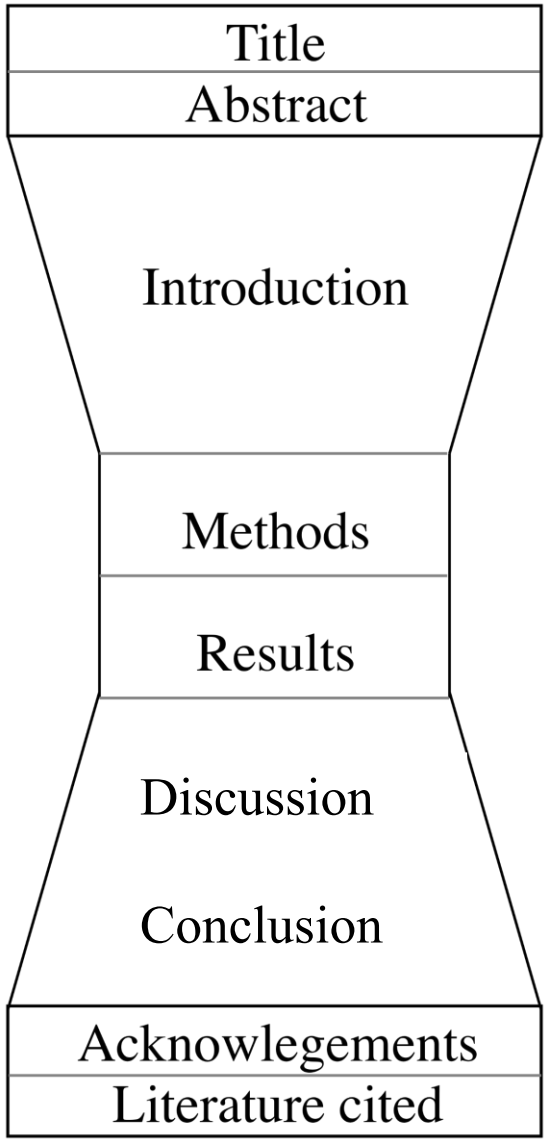
Discussion
Conclusion
Acknowlegements
Literature cited


Title, Author, Abstract, Keywords
• Descriptive information that lets readers search for an article.
Introduction
• What is the context for this project?
• How does it fit in with other research on the topic?
• What is the research question?
Methods
• What did the author(s) do to answer the research question?
Results
• What was the answer to the question?
• This is often shown in tables and figures.
Discussion/ Conclusion
• What is the significance of this project?
• How does it fit in with what else is known about the topic?
References
• Materials the author(s) cited when writing this paper.

期刊论文的主要组成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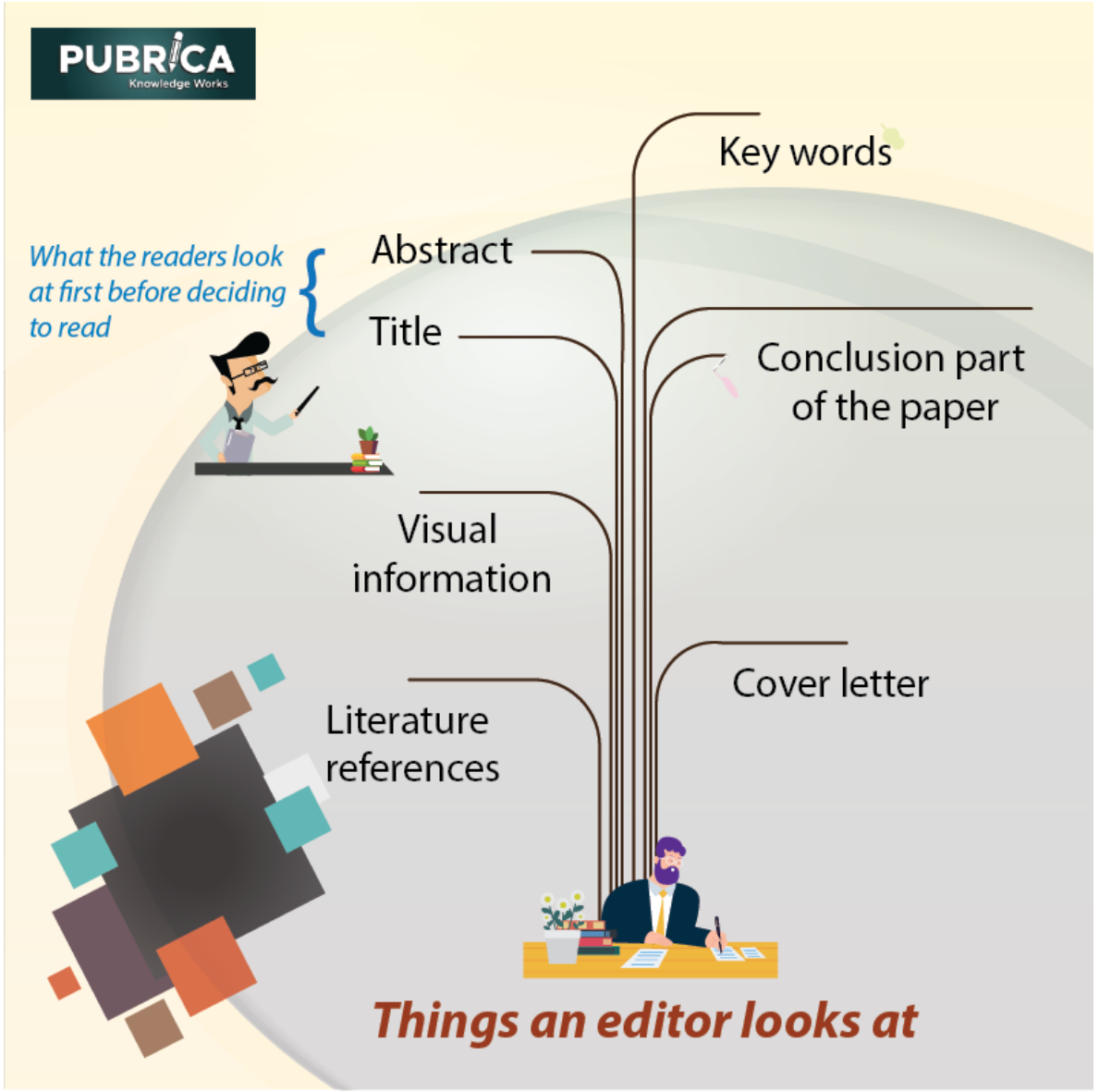
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Key words
What the readers look at first before deciding to read
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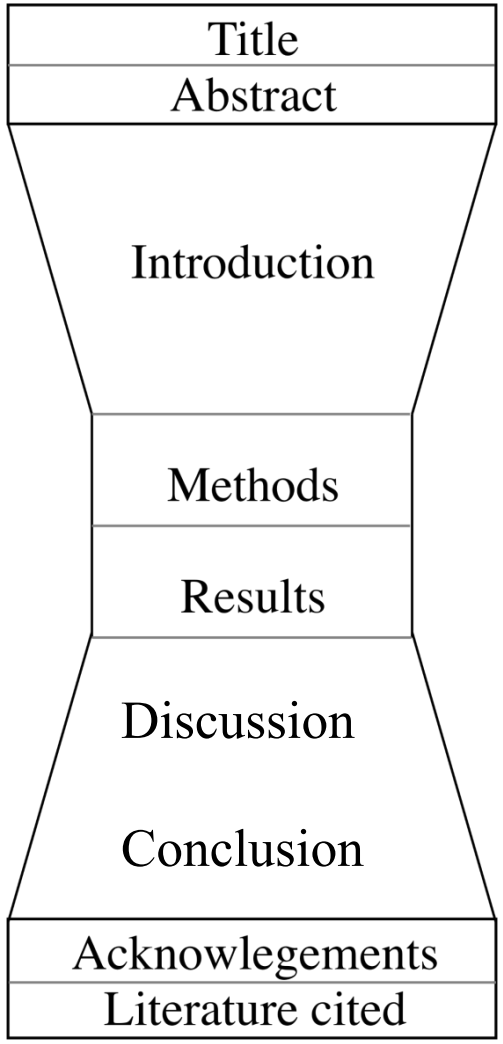
Cover letter
Literature references
Things an editor looks at

论文的第一印象–题目



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LETTER

Did the widespread haze pollution over China increase during the last decade? A satellite view from space

Minghui Tao[1,2], Liangfu Chen[1,2], Zifeng Wang[1,2], Jun Wang[3], Jinhua Tao[1,2] and Xinhui Wang[1]

[1] State Key Laboratory of Remote Sensing Science, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Beijing 100101, People's Republic of China
[2] Joint Center for Global Change Studies, Beijing 100875, People's Republic of China
[3] Department of Earth & Atmospheric Sciences, University of Nebraska—Lincoln, NE 68588, USA

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Keywords: haze, aerosol, MODIS, China

Supplementary material for this article is available online

Abstract

Widespread haze layers usually cover China like low clouds, exerting marked influence on air quality and regional climate. With recent Collection 6 MODIS Deep Blue aerosol data in 2000–2015, we analyzed the trends of regional haze pollution and the corresponding influence of atmospheric circulation in China. Satellite observations show that regional haze pollution is mainly concentrated in northern and central China. The annual frequency of regional haze in northern China nearly doubles between 2000 and 2006, increasing from 30–50 to 80–90 days. Though there is a marked decrease in annual frequency during 2007–2009 due to both reduction of anthropogenic emissions and changes of meteorological conditions, regional pollution increases

论文的精华-图

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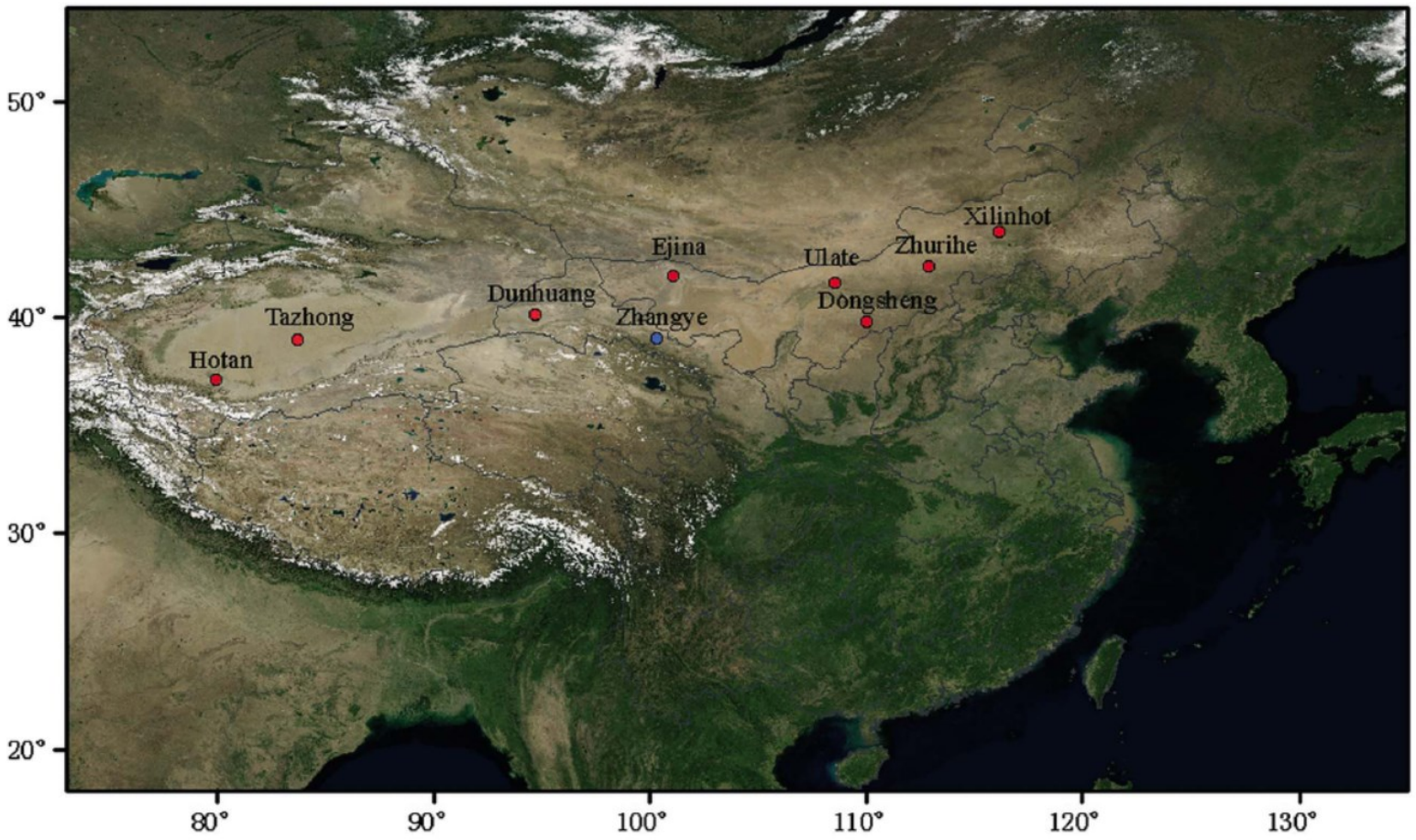
Literature cited



背景知识图

论文的精华-图

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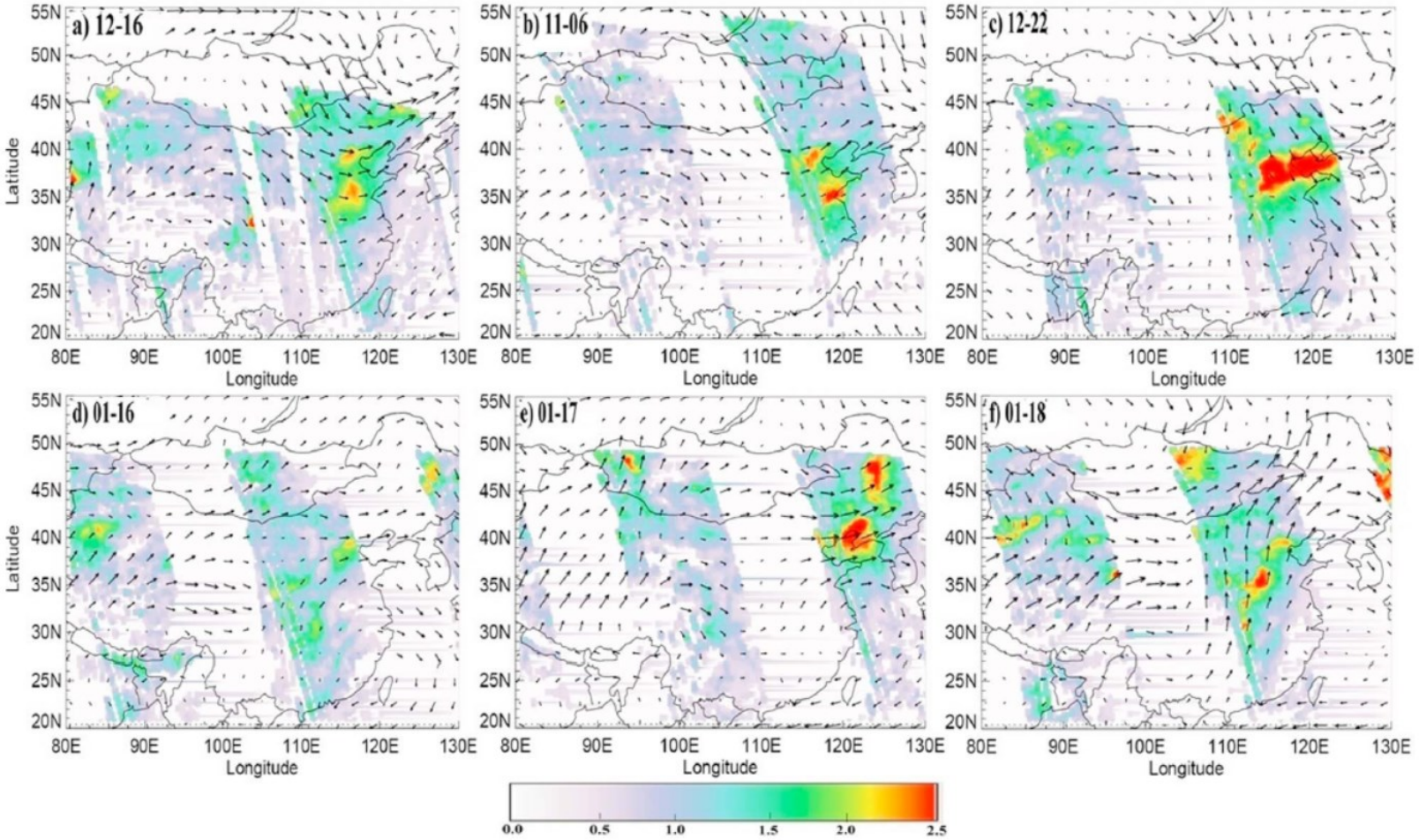
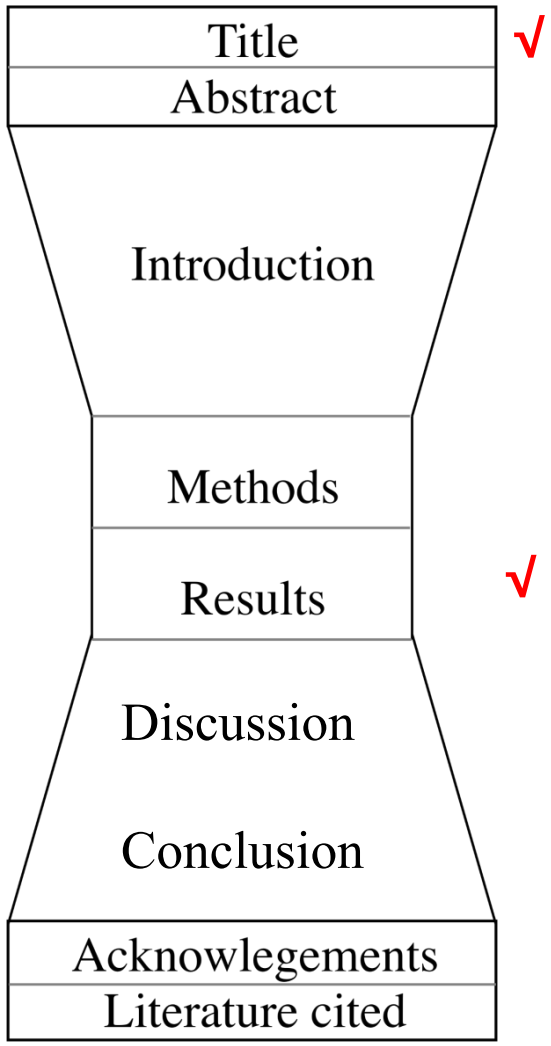


关键亮点图

论文的精华-图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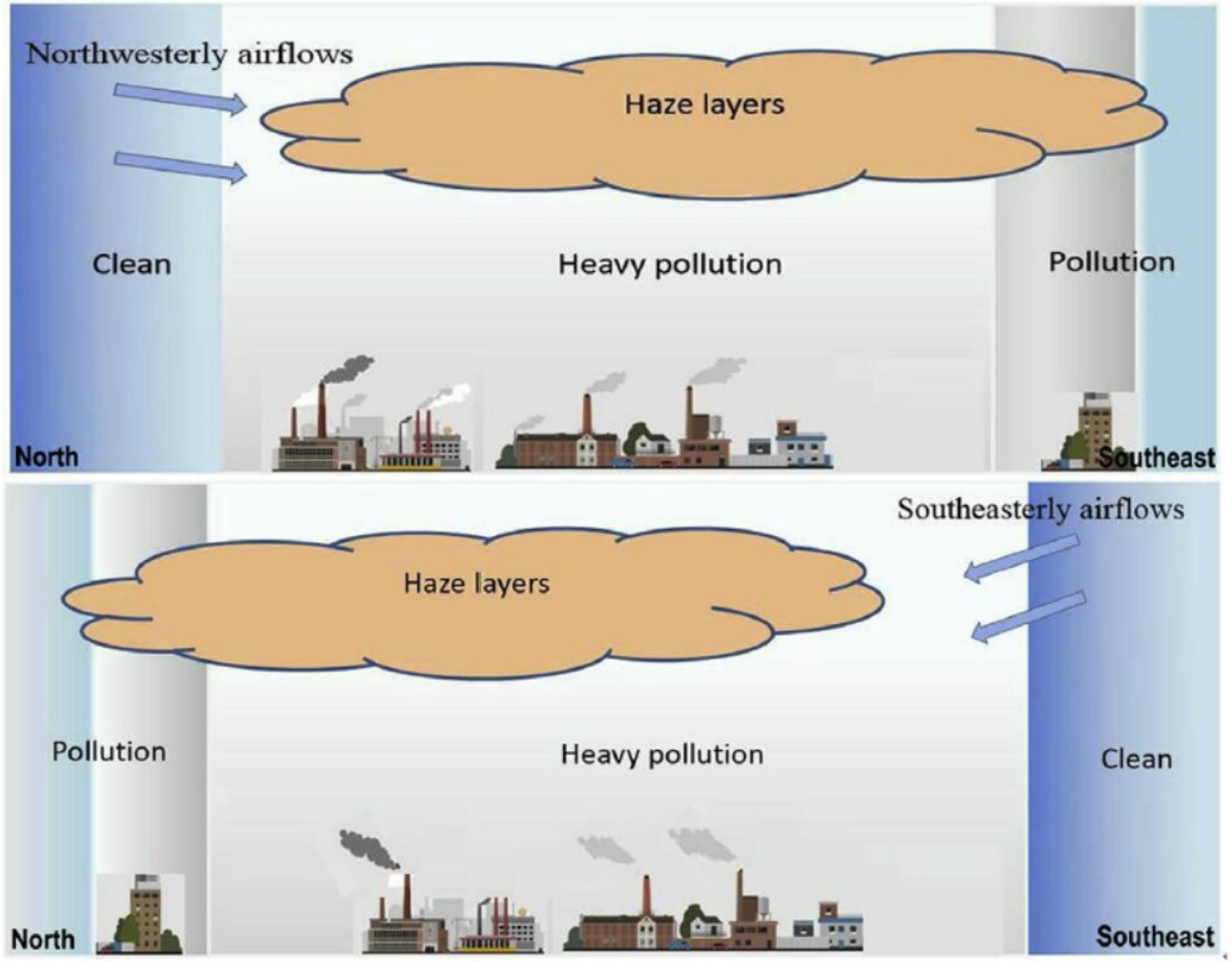
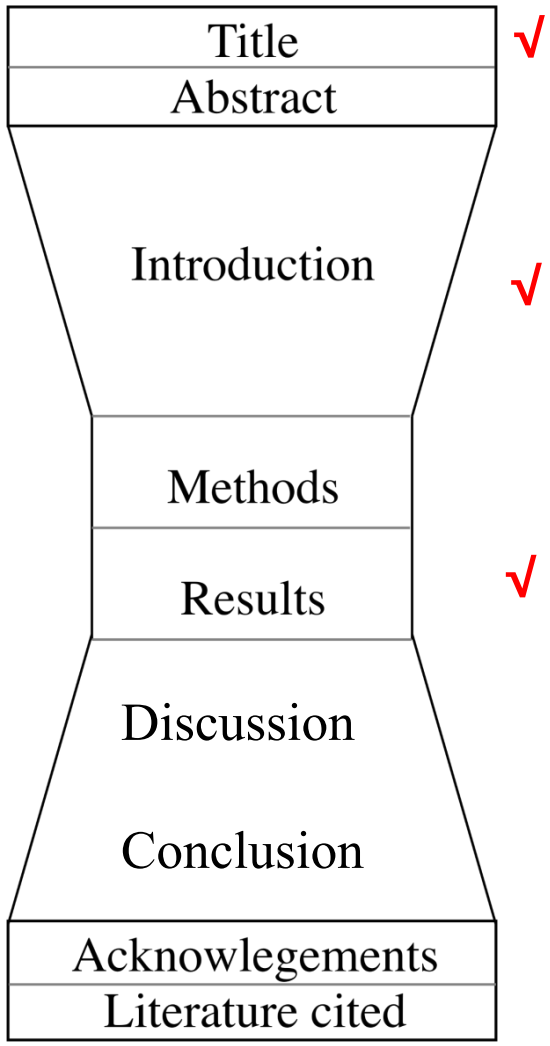

Northwesterly airflows
Haze layers
Clean
Heavy pollution
Pollution
North
Southeast
Southeasterly airflows
Haze layers
Pollution
Heavy pollution
Clean
North
Southeast

概念图

论文的逻辑基础-引言



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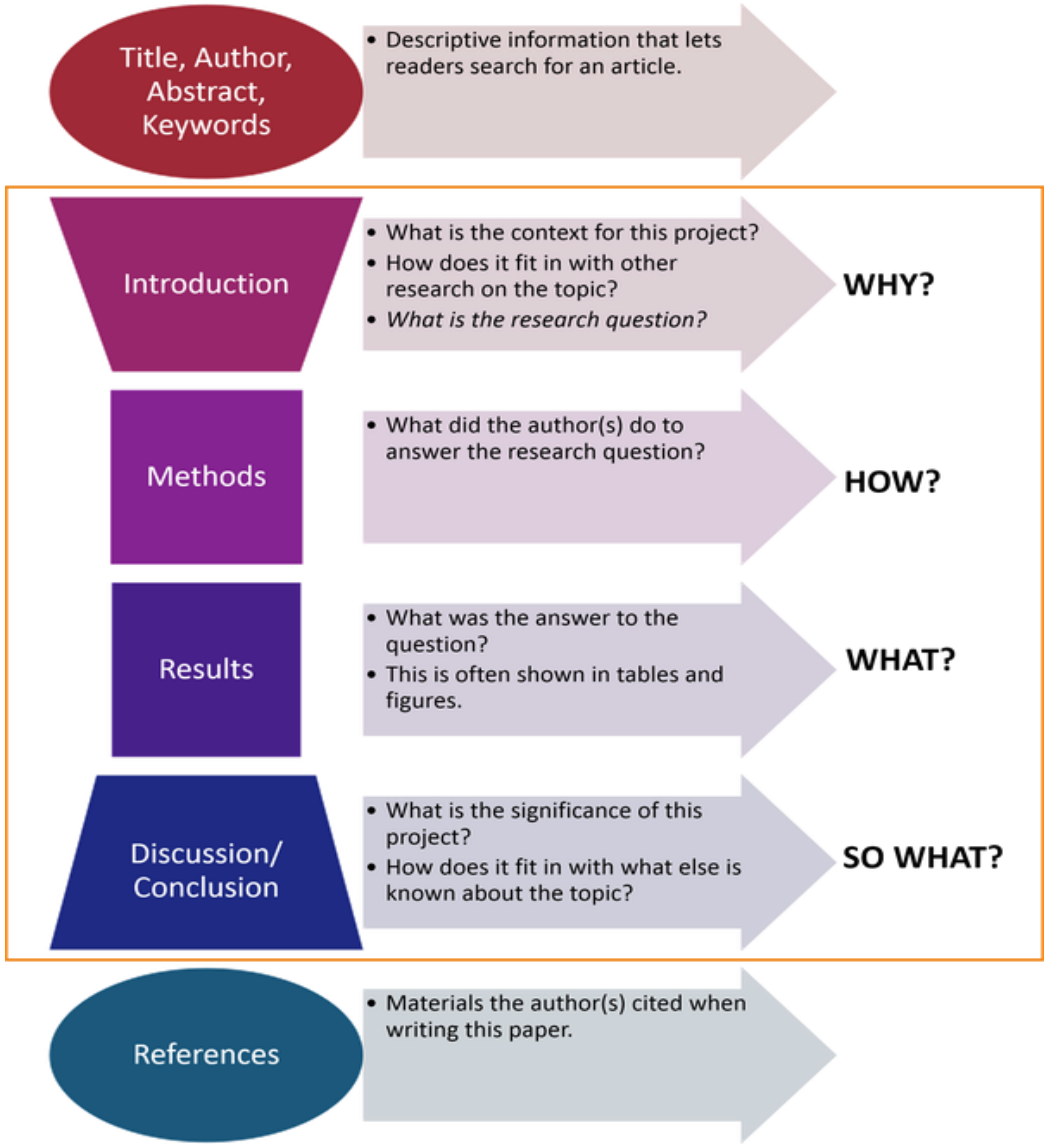


- **本研究的背景意义?**
- **已有的进展和不足?**
- **本论文的研究问题?**

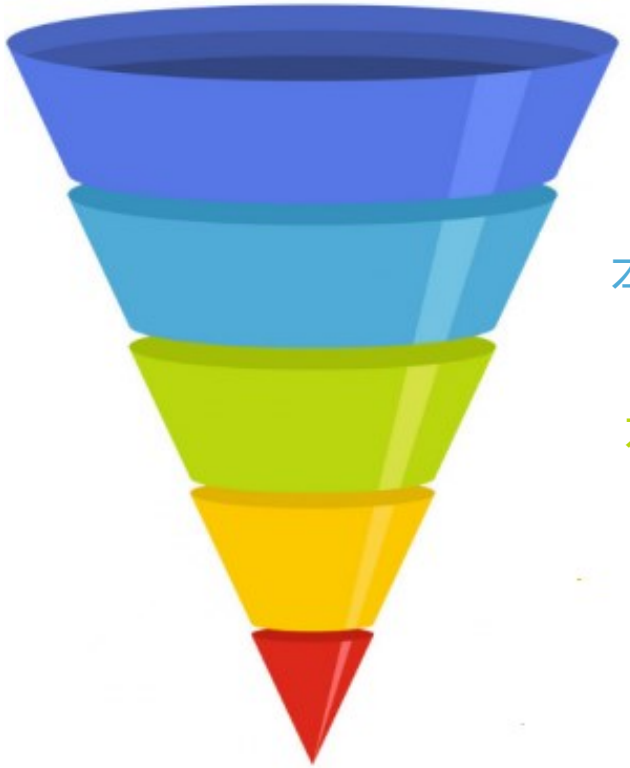
论文的逻辑基础-引言

①雾霾污染是国家和社会广泛关注的重大环境问题，但是大气污染来源复杂多变，浓度和理化特性具有极大的时空变化；

②卫星遥感是能够从全球及区域尺度获取全球大气成份时空分布的唯一观测手段…

③大气参数卫星遥感反演的难点，现有算法的不足

④本研究拟解决的问题，采用的数据和手段、设想；章节组织安排



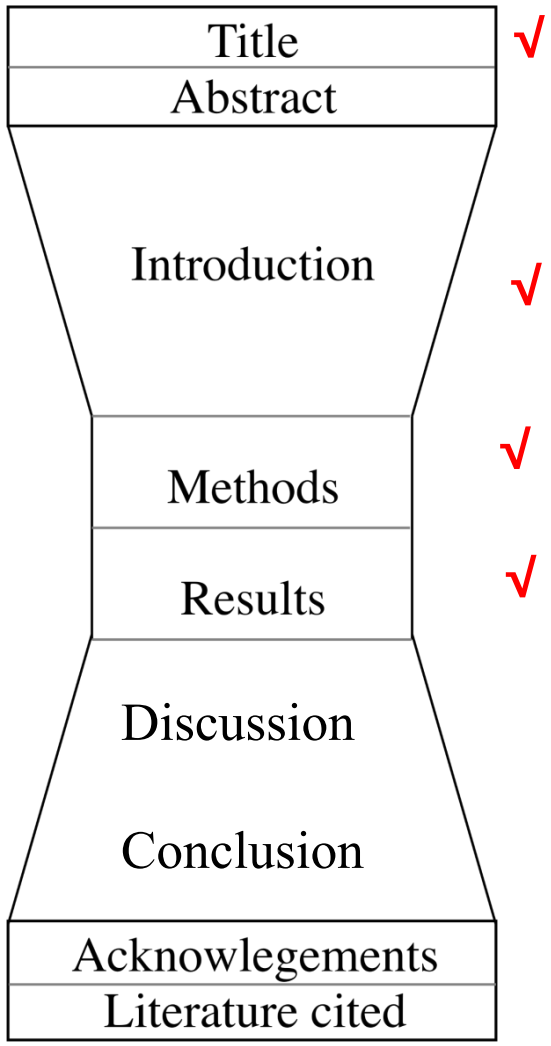
宽泛研究背景

本领域背景和进展

本领域内的问题

论文研究设想

论文的技术说明-数据与方法



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论文观点的强化和展望–讨论

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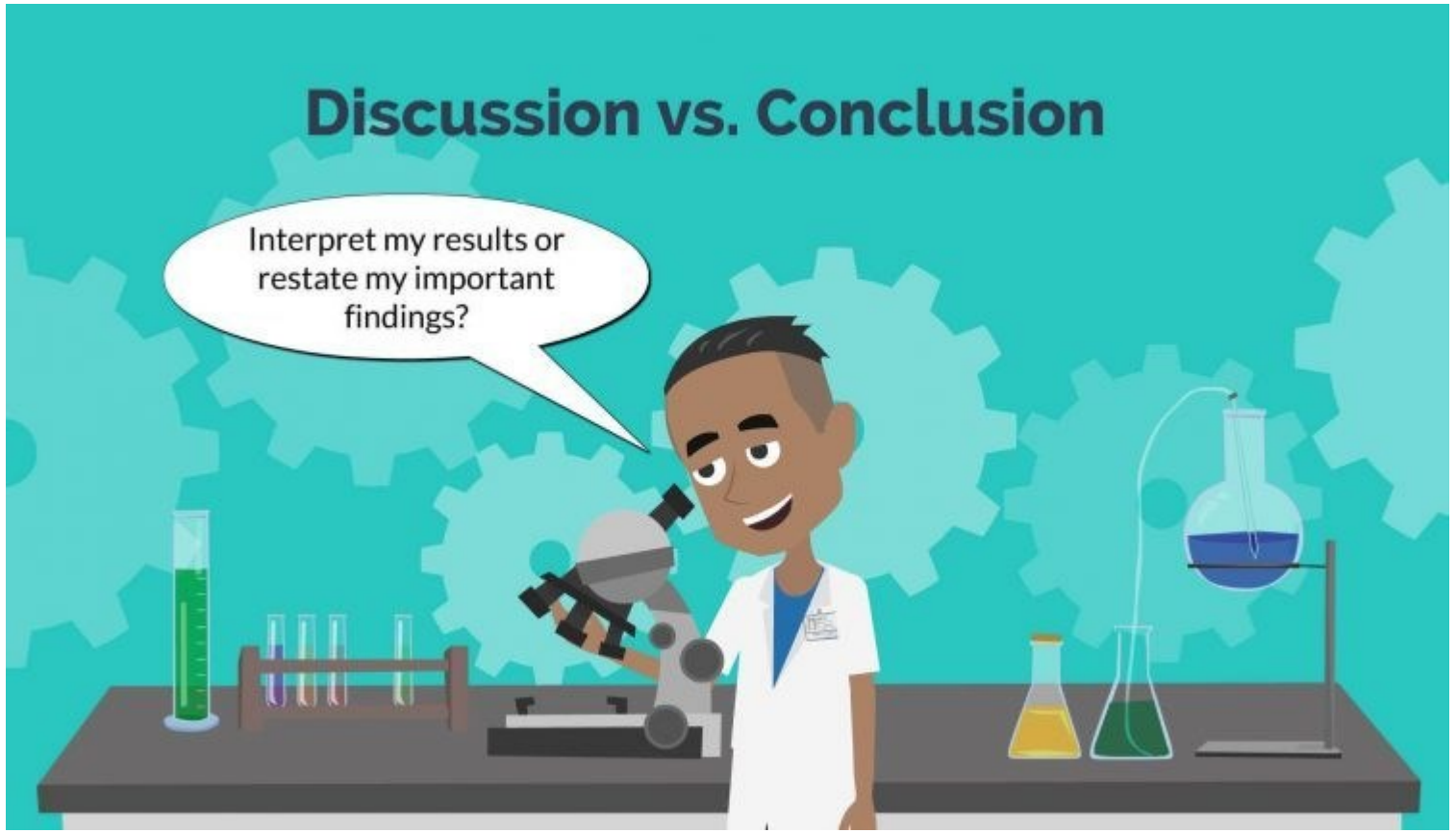
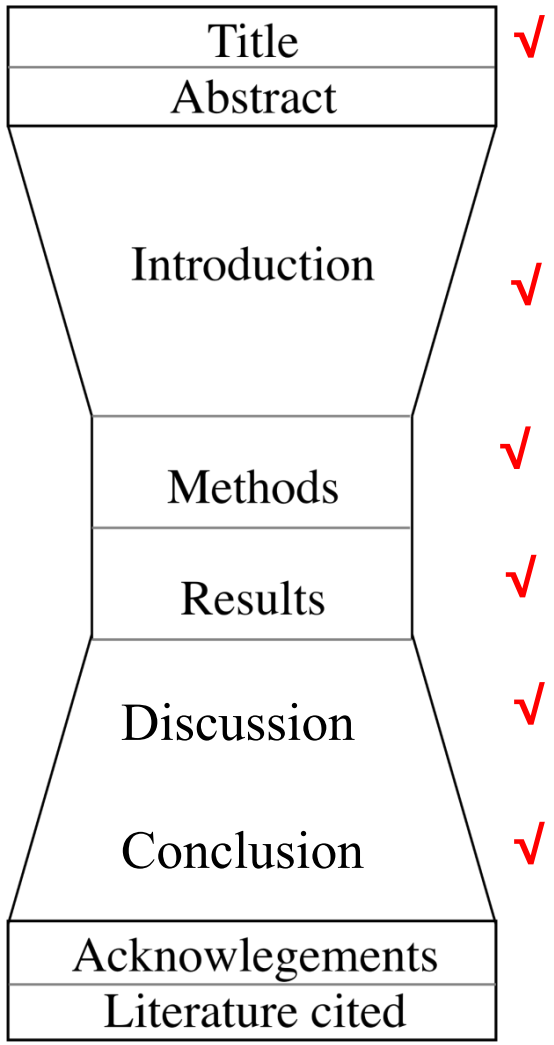
Discussion √
Conclusion
Acknowlegements
Literature cited



论文的总结–结论和摘要



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• The abstract is free, the conclusion is not … unless your paper is published under Open Access

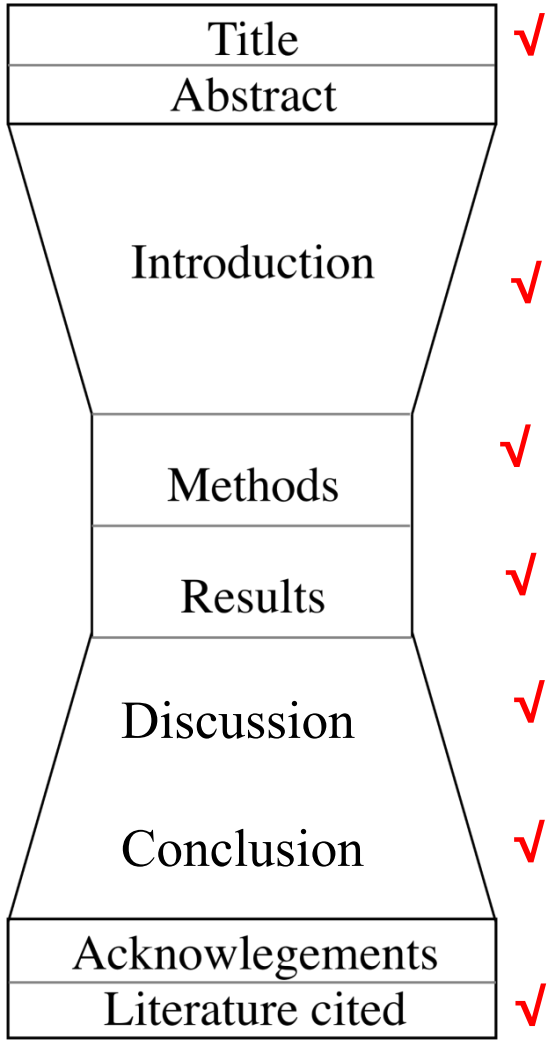
• The abstract helps decide whether or not your current paper is worth downloading for reading, the conclusion is to decide whether your next paper will be worth reading

• The abstract should **include some motivation** for the research, outline what was done, and a quick summary of the results.

• The conclusion usually explains the results and why they are important. It possibly will provide some explanation behind why the results were the way they were.

参考https://www.quora.com/

论文的理论依据–参考文献



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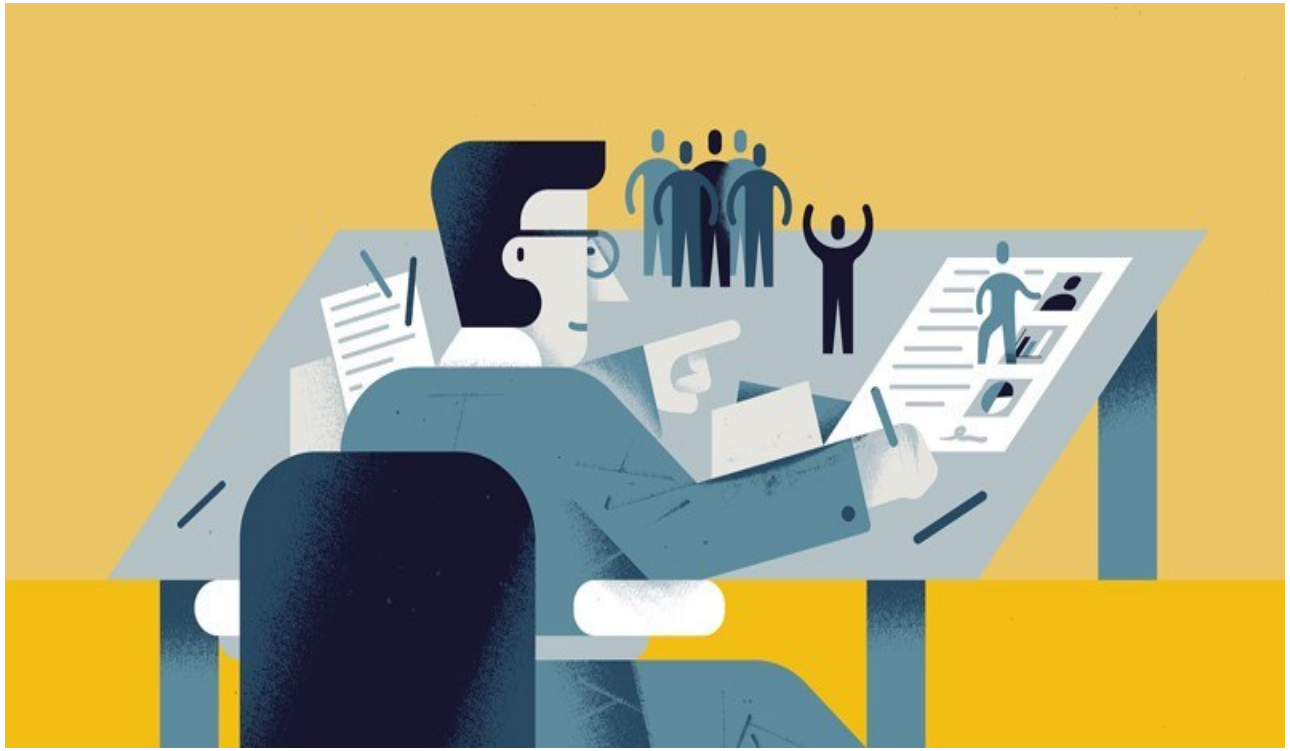
Author	Year	Title	Journal	Ref Type
Ångström	1929	On the atmospheric transmission of sun radiation and on dust in the air	Geografisk...	Journal Art
Bullrich	1964	Scattered Radiation in the Atmosphere and the Natural Aerosol	Advances i...	Book Sect
Kerker	1964	Aerosol studies by light scattering. I. Particle size distribution by polarization ratio method	Journal of ...	Journal Art
Dave	1970	Intensity and polarization of the radiation emerging from a plane-parallel atmosphere containing monodispersed aerosols	Appl Opt	Journal Art
Herman	1971	The effect of atmospheric aerosols on scattered sunlight	Journal of t...	Journal Art
Hovenier	1971	Multiple scattering of polarized light in planetary atmospheres	Astronomy ...	Journal Art
Prospero	1972	Vertical and areal distribution of Saharan dust over the western equatorial north Atlantic Ocean	Journal of ...	Journal Art
Hansen	1974	Light scattering in planetary atmospheres	Space Scie...	Journal Art
Prospero	1977	Dust Concentration in the Atmosphere of the Equatorial North Atlantic: Possible Relationship to the Sahelian Drought		Book
Tanre	1979	Atmospheric modeling for space measurements of ground reflectances, including bidirectional properties	Applied Op...	Journal Art
Tucker	1979	Red and photographic infrared linear combinations for monitoring vegetation	Remote Se...	Journal Art
Mekler	1980	The effect of Earth's atmosphere on contrast reduction for a nonuniform surface albedo and 'two-halves' field	Journal of ...	Journal Art
Dozier	1981	A method for satellite identification of surface temperature fields of subpixel resolution	Remote Se...	Journal Art
Griggs	1982	Satellite measurements of tropospheric aerosols	Advances i...	Journal Art
Kaufman	1982	Solution of the equation of radiative transfer for remote sensing over nonuniform surface reflectivity	Journal of ...	Journal Art
Kaufman	1982	Solution of the equation of radiative transfer for remote sensing over nonuniform surface reflectivity	Journal of ...	Journal Art
Kaufman	1982	Determination of surface albedos and aerosol extinction characteristics from satellite imagery	Journal of ...	Journal Art
Fowler	1983	Expansion of Mie-theory phase functions in series of Legendre polynomials	Journal of t...	Journal Art
Baker	1984	The effect of particle size on the light attenuation coefficient of natural suspensions	Journal of ...	Journal Art
Clark	1984	Reflectance spectroscopy: Quantitative analysis techniques for remote sensing applications	Journal of ...	Journal Art
Fraser	1985	Relative importance of aerosol scattering and absorption in remote sensing	IEEE Trans...	Journal Art
Flannigan	1986	Forest fire monitoring using NOAA satellite AVHRR	Canadian J...	Journal Art
Kaufman	1987	Satellite sensing of aerosol absorption	Journal of ...	Journal Art
Nakajima	1988	Algorithms for radiative intensity calculations in moderately thick atmospheres using a truncation approximation	Journal of ...	Journal Art
Tanre	1988	Estimation of Saharan aerosol optical thickness from blurring effects in thematic mapper data	Journal of	Journal Art

关于期刊论文写作的一些建议

How to write a first-class paper



Nature **555**, 129-130 (2018)

- **Keep your message clear**

  论文的根本目的是传递新信息
- **Create a logical framework**

  论文整体都要围绕一个关键点
- **State your case with confidence**

  清晰直述论文的新意和优点
- **Beware the curse of ‘zombie nouns’**

  避免实验报告式的单调、冗繁描述
- **Prune that purple prose**

  不要简单问题复杂化、遗漏重要的环节
- **Aim for a wide audience**

  论文不只是写给小同行看的

关于期刊论文写作的一些感想

- **学术论文写作是一个快速学习和自我提升的过程**
- **学术论文写作是一个自我表达和专业交流的媒介**
- **学术论文写作是个人学术能力和研究水平的标志**