



中国地质调查局  
CHINA GEOLOGICAL SURVEY

# HOW TO WRITE A GOOD PAPER

CHENG Yan-pei

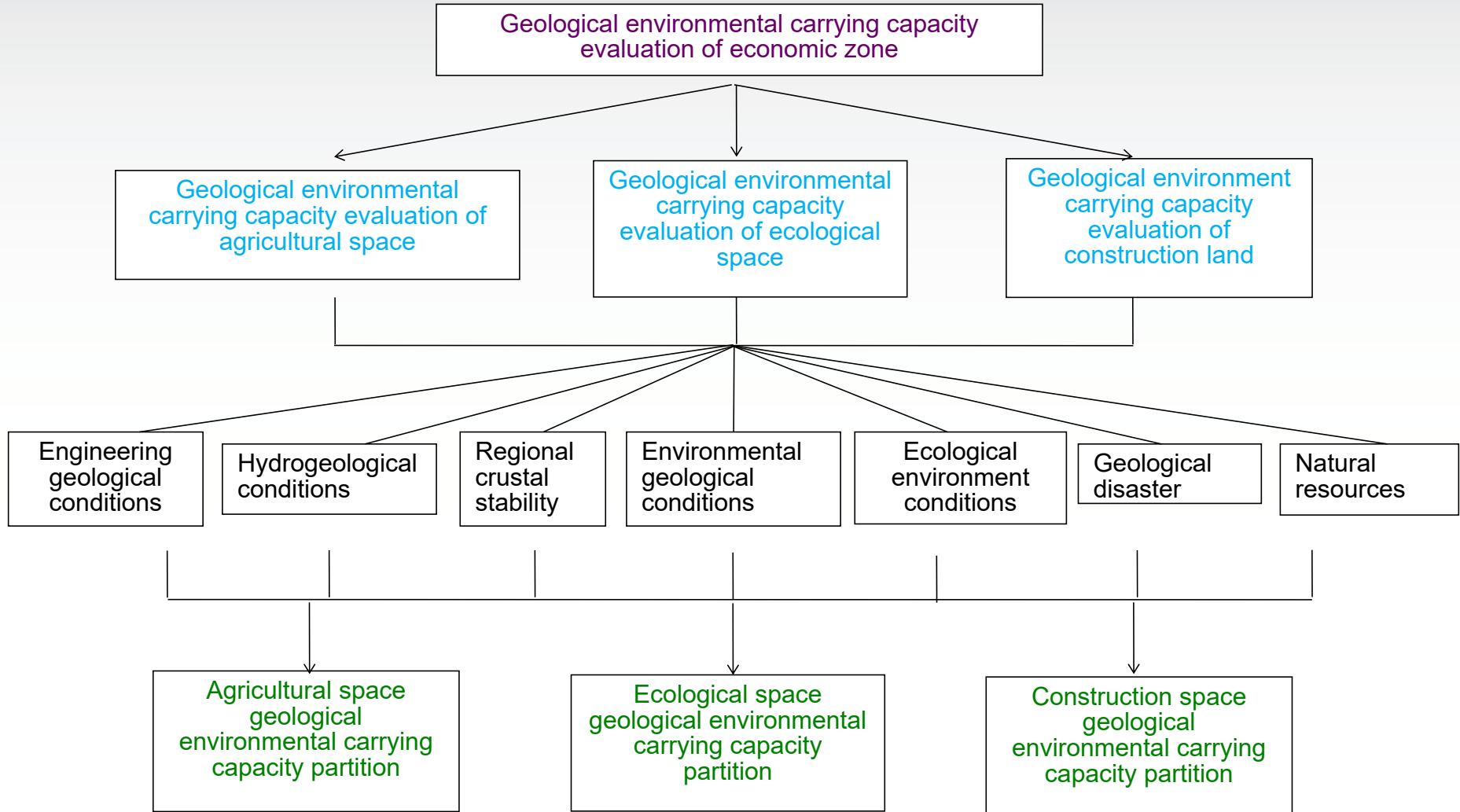
*Journal of Groundwater Science and Engineering*

*The Institute of Hydrogeology and  
Environmental Geology CGS*





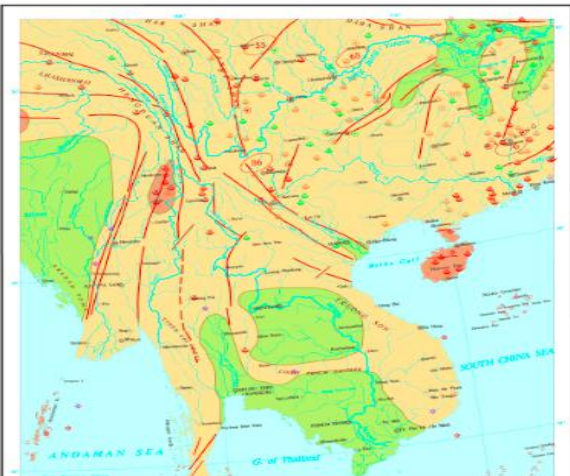
# Research and Evaluation of Geological Environmental Carrying Capacity



Evaluation approach and technical route diagram <sup>3</sup>

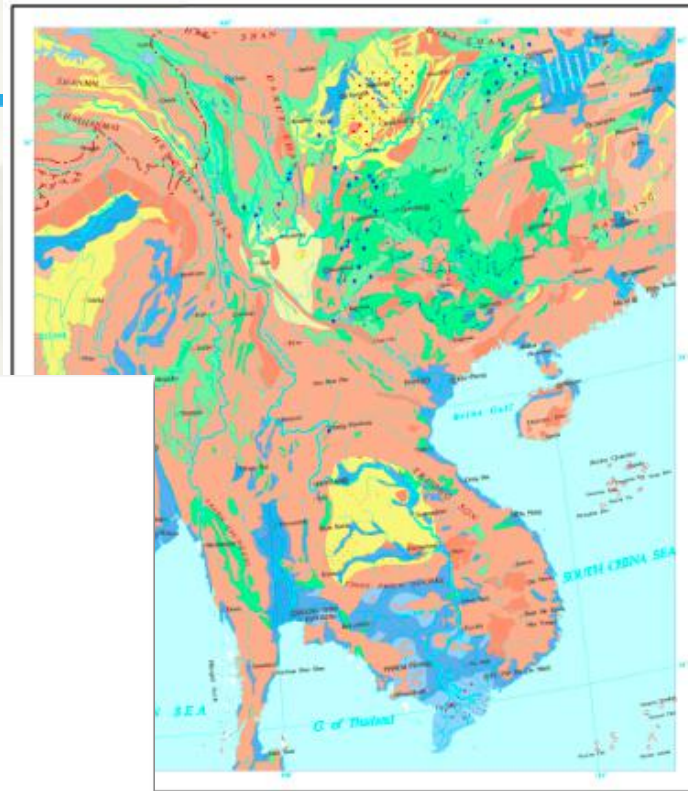


Geothermal Map of Greater Meikong Basin



- Geothermal Type**
- High Temperature Geothermal Area
  - Light High Temperature Area
  - Medium High Temperature Area
- Geothermal Thermal Trend**
- High Temperature Trend
  - Light High Temperature Trend
  - Medium High Temperature Trend
- Geothermal Thermal Spot**
- High Temperature Spot
  - Light High Temperature Spot
  - Medium High Temperature Spot

Hydrogeological Map of Greater Meikong Basin



- Groundwater Storage Characteristics**
- Scale of Storage
- 1000
  - 2000
  - 3000
  - 4000
  - 5000
  - 6000
  - 7000
  - 8000
  - 9000
  - 10000
- Groundwater Storage Characteristics**
- High Storage
  - Medium Storage
  - Low Storage

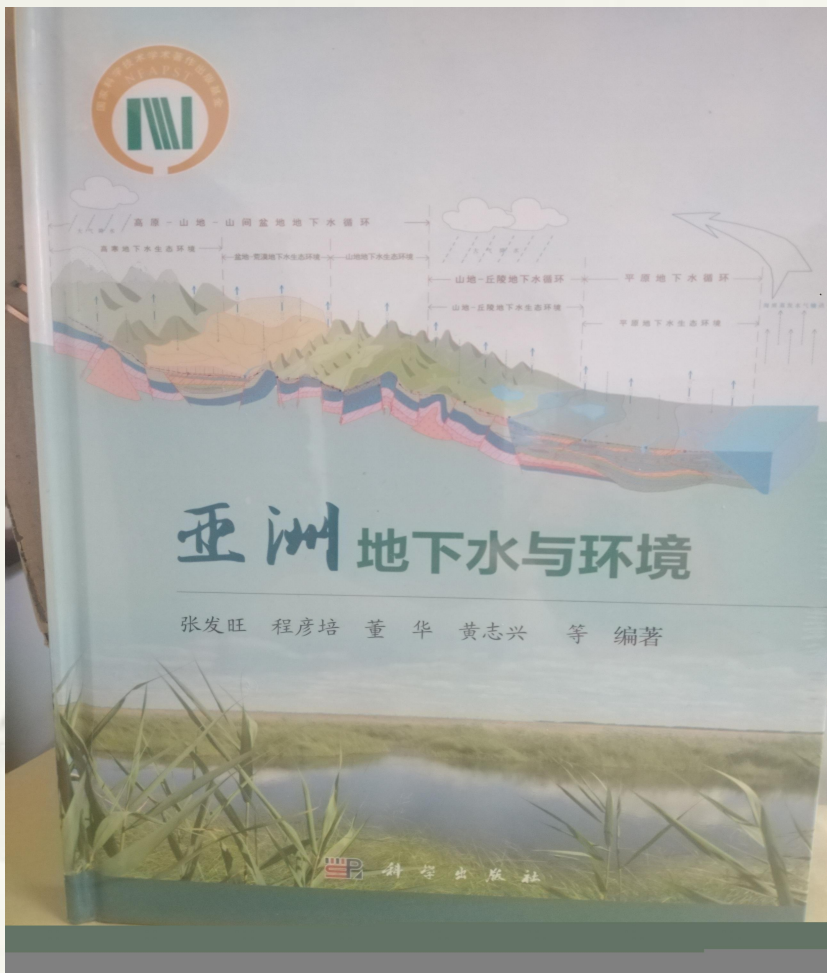
- Circulation Quality**
- Fast Circulation
  - Fast Water Circulation in Surface
  - Fast Water Flow
  - Medium Water Flow with Surface
  - Medium Water Flow
  - Medium Water Flow in Surface
  - Medium Water Flow and Surface

- Boundaries**
- Outline of Basin
  - Outline of Plateau
  - Plateau
  - Major International River
  - Sea Water Table

Groundwater Resources Map of Greater Meikong Basin

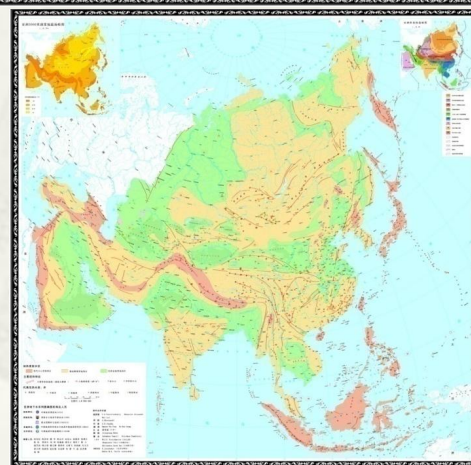
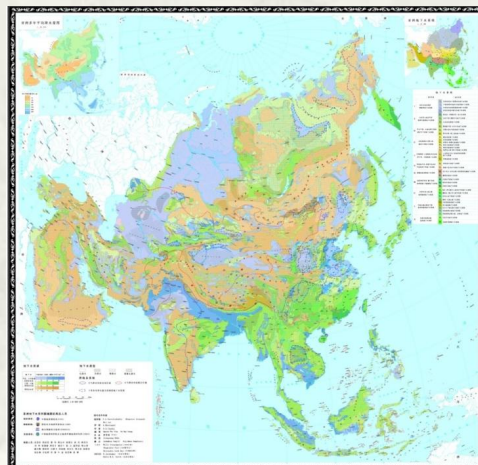
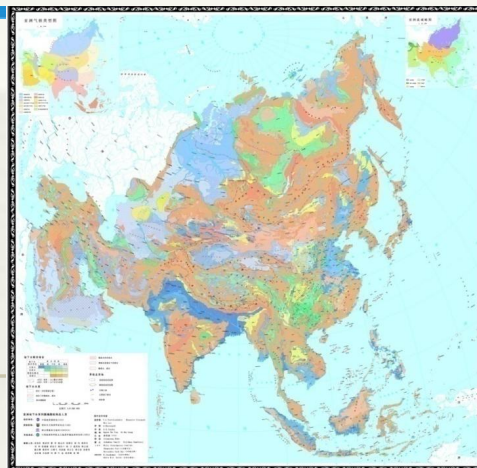


- Groundwater Resources**
- Scale of Resources
- 1000
  - 2000
  - 3000
  - 4000
  - 5000
  - 6000
  - 7000
  - 8000
  - 9000
  - 10000
- Groundwater Type**
- High Resource
  - Medium Resource
  - Low Resource
- Boundaries**
- Outline of Basin
  - Outline of Plateau
  - Plateau
  - Major International River
  - Sea Water Table



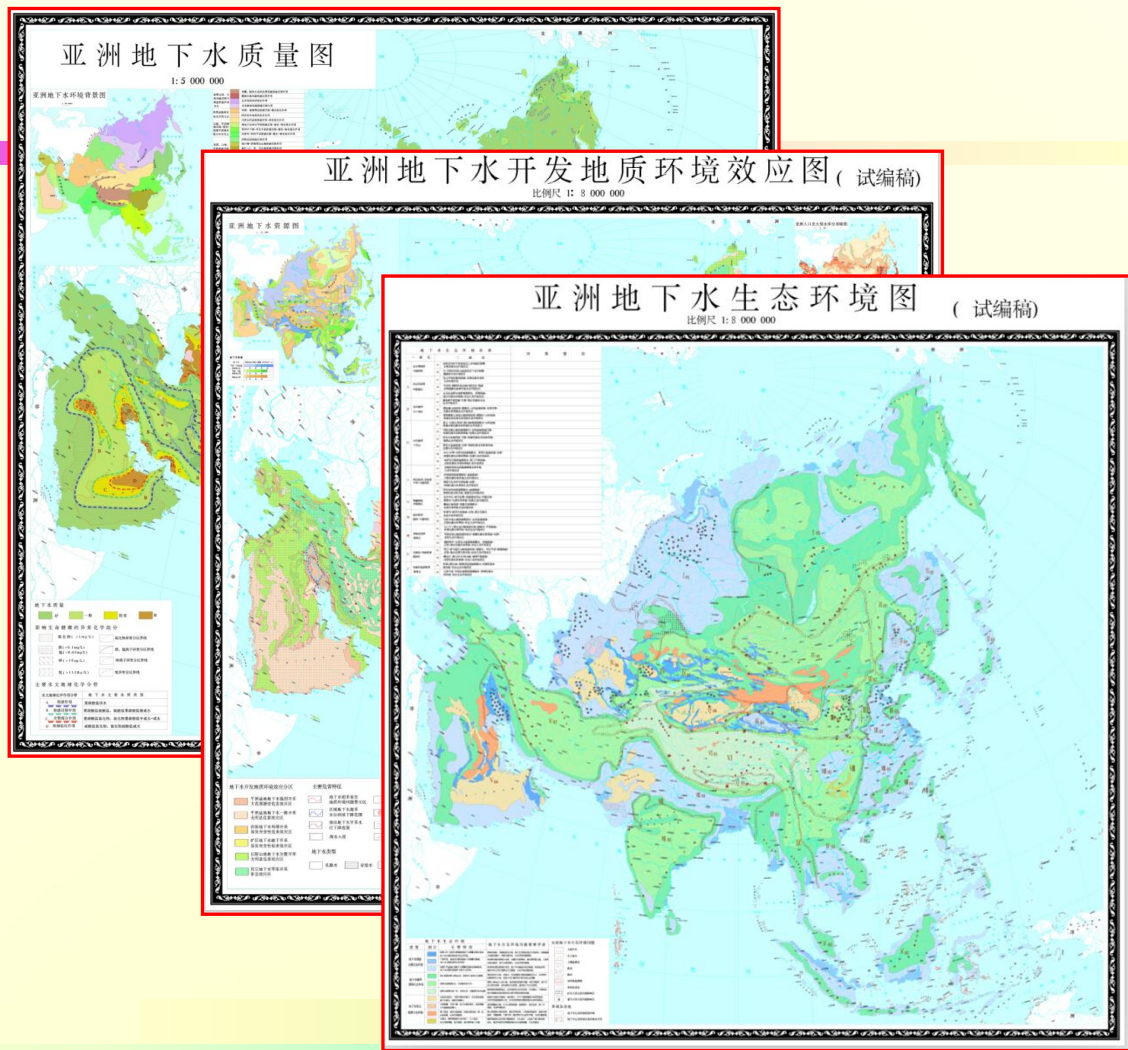


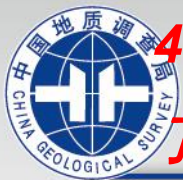
# 亚洲地下水系列图



中国地质调查局  
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# 亚洲地下水环境系列图





# 4、编制了中亚五国与中国相邻地下水系列图，并对研究区水资源取得了一些认识

中亚五国及中国相邻地区水文地质图

1: 2500000

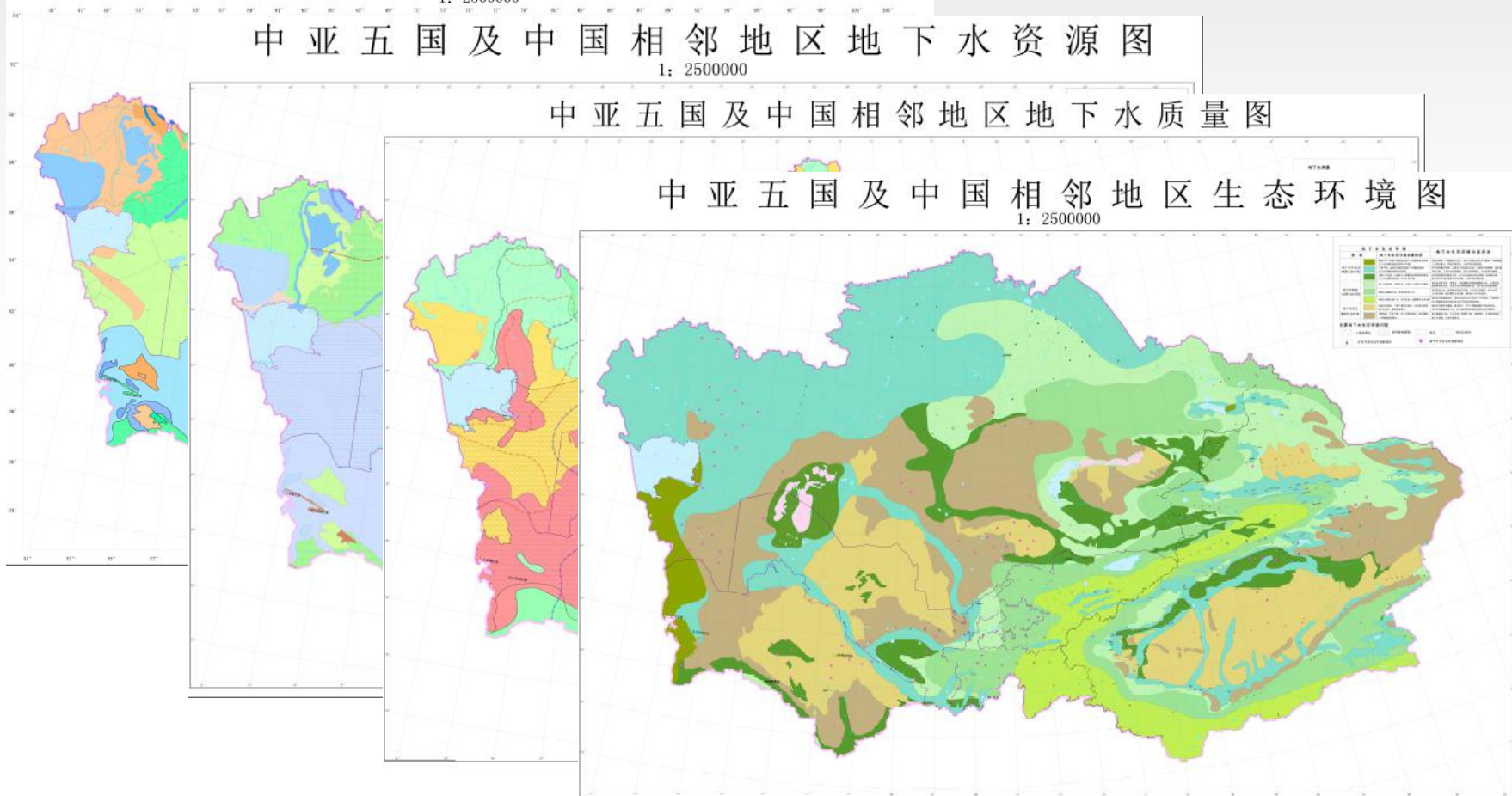
中亚五国及中国相邻地区地下水资源图

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中亚五国及中国相邻地区地下水质量图

中亚五国及中国相邻地区生态环境图

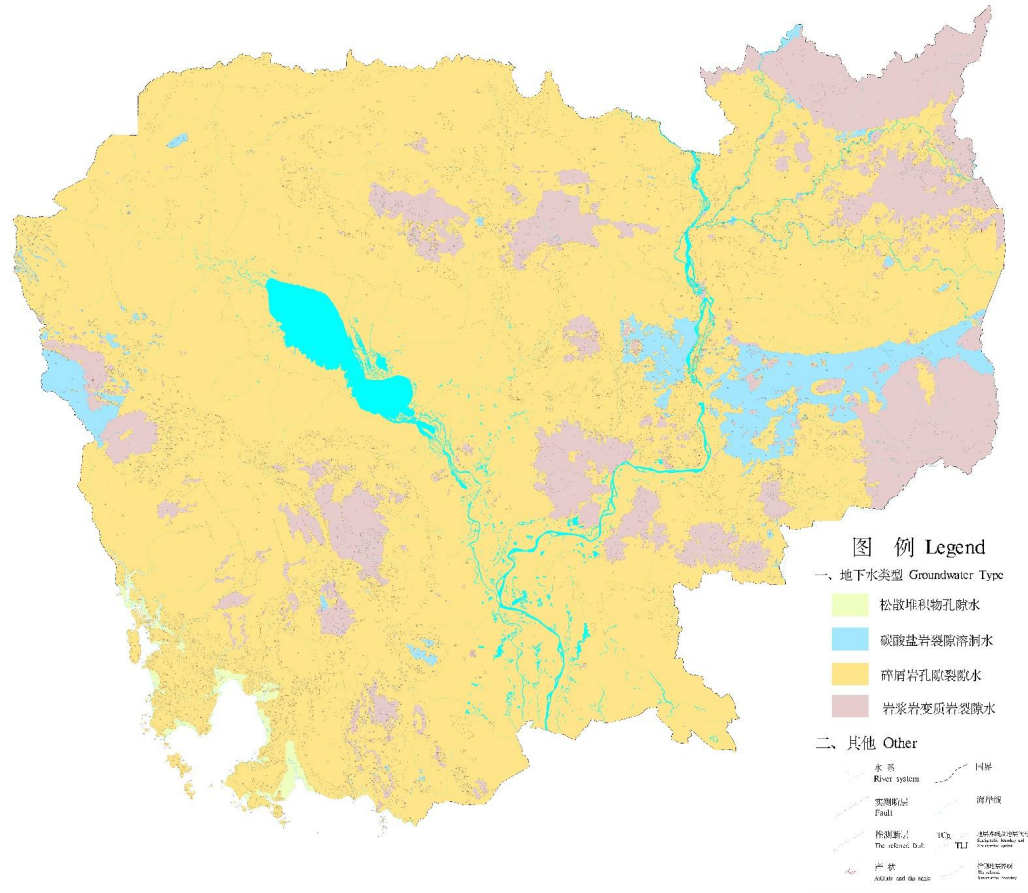
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# Type of Groundwater in Cambodia

柬埔寨 1:50 万地下水类型图



# Outline

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- \* About

*Journal of Groundwater Science and Engineering*

- \* Why we have to write good papers?

- \* Three main types of paper

- \* Preparation

- \* How to write?

- \* Some tips



# Journal of Groundwater Science and Engineering

The Journal was founded in 2013 to foster understanding of groundwater sciences and engineering, which published quarterly in English. All papers can be downloaded free with the link:

The image displays the journal's cover and website interface. The cover features a desert landscape with a large, dark, circular water feature. The text on the cover includes the journal title, ISSN 2305-7068, CODEN JGSEA7, and the issue information: Mar. 2021, Vol. 9 No. 1. The website header shows the journal title, ISSN, and indexing information (ESCI, CABI, CSA, Scopus, GeoRef, AJ, CNKI). The main content area highlights a paper titled "NARX neural network approach for the monthly prediction of groundwater levels in Sylhet Sadar, Bangladesh" with a map of the study area. The website also includes navigation links, a search bar, and a sidebar with options like "Online Submission", "Peer Review", "Office Work", and "Editor-in-chief".

**Journal of Groundwater Science and Engineering**  
ISSN 2305-7068  
CODEN JGSEA7  
Mar. 2021  
第 9 卷第 1 期  
Vol. 9 No. 1

**Journal of Groundwater Science and Engineering**  
ISSN 2305-7068  
Indexed by ESCI CABI CSA  
Scopus GeoRef AJ CNKI

May 6, 2021  
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Study Area  
Sylhet Sadar

NARX neural network approach for the monthly prediction of groundwater levels in Sylhet Sadar, Bangladesh

Online First Current Issue Archive Top Read Top Down

Select All

2021, Issue 1

Aquifer hydraulic conductivity prediction via coupling model of MCMC-ANN  
GUI Chun-lei, WANG Zhen-xing, MA Rong, ZUO Xue-feng

Editor-in-Chief ZHANG Yong-shuang  
Sponsors  
Institute of Hydrogeology and Environmental Geology, CAGS  
International Association of Hydrogeologists, IAH  
Commission on Hydrogeology, Geological Society of China

## The journal is sponsored by

China Chapter, International Association of Hydrogeologists (IAH-CC),  
Commission on Hydrogeology,

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Geological Society of China(GSC-CH)

and the Institute of Hydrogeology and Environmental Geology (IHEG), CAGS.

## The journal aims

to be an innovative, high-impact and authoritative academic journal for researchers across the hydrogeology, environmental geology, engineering geology, ecology and environment. It mainly reports the latest and most important achievements in cutting-edge and emerging topics , as well as the traditional topics referring to new methodology, technology, applications and theoretical research in groundwater science and engineering,

## The journal including

research papers, review papers and reports *etc.*



without limiting paper  
length (must be concise)  
Publish quickly.

---

Papers published involve various aspects of research concerning groundwater, such as geochemistry, geophysics, geomorphology, geobiology, urban geology, geothermy, groundwater development and utilization, groundwater resources-environment-sustainability, numerical modeling, groundwater pollution, emerging contaminants, soil science, and also involve groundwater environment evolution influenced by climate change and human activities, relate with innovative instrumentation, remote sensing, data and information sciences *etc.*

It is indexed in: **ESCI**, CABI (full text), **Scopus**, GeoRef, VINITI Abstracts Journal (AJ) , CNKI, CQVIP *etc.*

# Why we have to write good papers?

---

- \* **Publish or perish**

  - Achievements: if they are not published, they do not exist.**

  - Researchers: Without publication, your career will be difficult to sustain. Your paper is your passport to your community.**

- \* **There are three necessary steps in useful research: the first to begin it, the second to end it and the third to publish it.**

  - **M. Faraday**

- \* **A prerequisite for promotion in universities & research institutions ; Key requirement for applying for some grant programs**



# Three main types of paper

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- \* **Original articles**

The most important papers; often substantial completed pieces of research that are of significance.

- \* **Review papers / Perspectives**

Summarize recent developments on a specific topic; highlight important points that have been previously reported and introduce no new information; often submitted on invitation.

- \* **Letters / Rapid Communications / Short Communications**

Usually published for the quick and early communication of significant and original advances;

# Preparations

---

- \* Have you made a contribution/solved a problem in your field?
- \* Put your work into perspective with existing data!
- \* Know the latest results!!
- \* Read a lot of the important and new papers in your field.
- \* Select the right journal.

---

\* Important are both

...the **CONTENT** - original, useful and exciting

...and the **PRESENTATION** - clear, logical

\* Before typing, read the specific 'Guide for Authors', 'template', from journal website. Apply to your manuscript, even to the first draft (text layout, paper citation, nomenclature, figures and table, etc.). It will save your time, and the editor's.



**“The following problems appear much too frequently”**

- Submission of papers which are clearly out of scope
- Failure to format the paper according to the Guide for Authors
- Inappropriate (or no) suggested reviewers
- Inadequate response to reviewers
- Inadequate standard of English
- Resubmission of rejected manuscripts without revision

– Paul Haddad, Editor, *Journal of Chromatography A*

# What leads to acceptance ?

- Attention to details
- Check and double check your work
- Consider the reviewers' comments
- English must be as good as possible
- Presentation is important
- Take your time with revision
- Acknowledge those who have helped you
- New, original and previously unpublished
- Critically evaluate your own manuscript
- Ethical rules must be obeyed



– Nigel John Cook  
Editor-in-Chief, *Ore Geology Reviews*



# How to write ?

---

- \* Grammar

  - UK or US spelling? Be consistent!

- \* Style

  - "Everything should be made as simple as possible, but not simpler" (Einstein)

    - Be clear

    - Be objective

    - Avoid imprecise language (nowadays  
– currently)

    - Be brief



# The general structure of a full article

- Title
- Authors
- Abstract
- Keywords

Make them easy for indexing and searching! (informative, attractive, effective)

- Main text (IMRAD)
  - Introduction
  - Methods
  - Results
  - And
  - Discussion (Conclusions)

Journal space is precious. Make your article as brief as possible. If clarity can be achieved in  $n$  words, never use  $n+1$ .

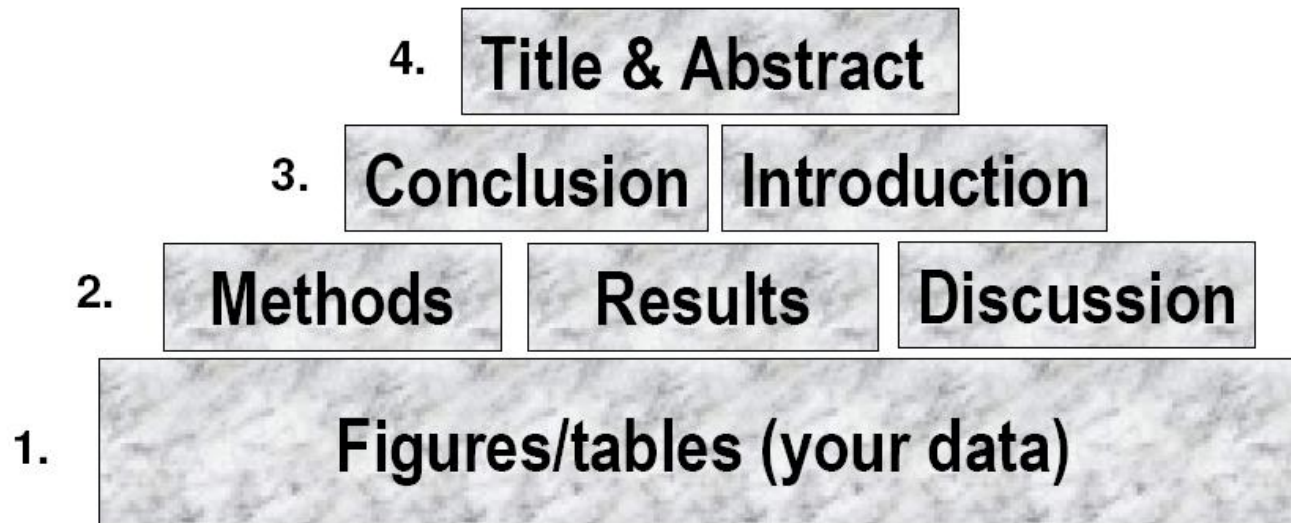
- Acknowledgements
- References
- Supplementary material



## Work in progress vs. final masterpiece

### The process of writing – building the article

This is a very individual process, and you should do it in the way that suits you best. Many find it easiest to start spinning the story starting with figures/tables, the actual data.



## The final article

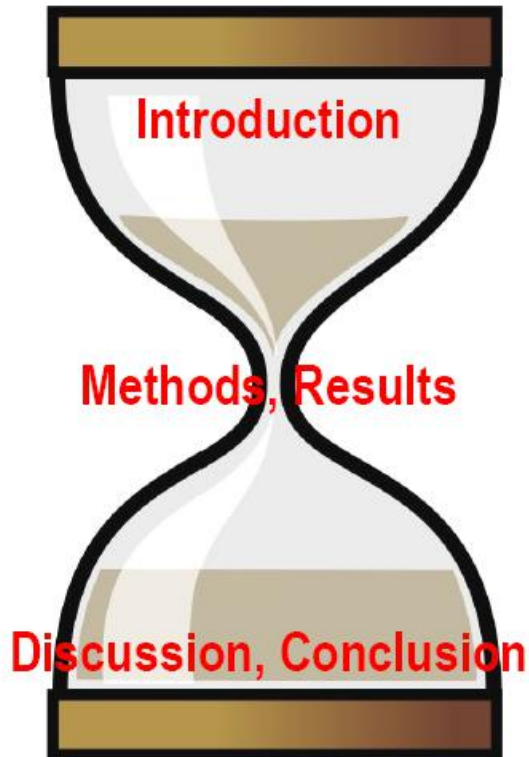
GENERAL



SPECIFIC



GENERAL





# Title

---

- \* Title of the article: **precise, concise, informative and attractive.**
- \* Avoid technical jargon and abbreviations if possible.

**Bad sample: Effect of oxalic acid on Cr tolerance in the Accumulating Plant *Leersia hexandra* Swartz**

**Good sample: Oxalic acid enhances Cr tolerance in the accumulating plant *Leersia hexandra* Swartz**

**Bad sample: Effect of Cr on tissue construction in *Leersia hexandra***

**Good sample: Changes of microstructure in *Leersia hexandra* under Cr stress**

# Abstract

---

**tell the prospective readers what you did and what were the important findings.**

This is the advertisement of your article. Make it interesting, and easy to be understood without reading the whole article.

- \* It must be **accurate** and **specific**! Keep it as **brief** as possible!!!
- \* These are the basic components of an abstract in any discipline:
  - Motivation/problem statement**: Why do we care about the problem?
  - Methods/procedure/approach**: What did you actually do to get your results?
  - Results/findings/product**: As a result of completing the above procedure, what did you learn/invent/create?
  - Conclusion/implications**: What are the larger implications of your findings, especially for the problem/gap identified in step 1?

# Keywords

---

mainly used for indexing and searching

- \* Don' t be too narrow, and neither too broad
- \* Avoid abbreviations
- \* Check the Guide for Authors!

**TIP:** Search for your  
keywords online.

→ Would readers find **YOUR**  
article using these keywords?



# Introduction

to convince readers that you clearly now why your work is useful

## 1. Introduction

Epigenetic modifications are increasingly recognized to play significant roles in both normal cellular physiology and disease processes, particularly in cancer where aberrant gene expression has long been associated with the pathogenesis of diseases. The histone acetylation status, one of the major groups mediating epigenetic modifications, is determined by the opposing actions of histone acetyltransferases (HATs) and histone deacetylases (HDACs). HAT inactivation has been linked to oncogenesis and experimental evidence suggests that the aberrant HDAC activity leads to the transcriptional repression of specific tumor suppressor genes, thus contributing to tumor formation (Marks et al., 2001; Karagiannis and El-Osta, 2006). Actions of HDAC inhibitors (HDACIs) often result in cell cycle arrest, differentiation and apoptosis in numerous transformed cell lines in culture and *in vivo* (Johnstone, 2002; McLaughlin and La Thangue, 2004; Minucci and Pelicci, 2006).

Therefore, the development of HDACIs as therapeutic agents for cancer treatment has recently been intensified.

Give overall picture – keep it brief! (no history lesson!)

Current state of knowledge



Nevertheless, Vorinostat known as SAHA (suberoylanilide hydroxamic acid) that recently has been approved by FDA for the treatment of cutaneous T-cell lymphoma (CTCL) is not an ideal drug due to its low solubility and permeability classification (Class IV), according to the Biopharmaceutical Classification System (BCS), and short half-life in clinical trials (half-life of 120 min for oral administration vs. 40 min for intravenous) (Kelly et al., 2005). Moreover, HDACi with substantially longer half-lives, such as MS-275 with a half-life of up to 80 h, display higher toxicity profiles (Ryan et al., 2005). Additionally, Valproic acid binds to serum proteins (up to 90% of the absorbed drug) and exhibits low potency (Minucci and Pelicci, 2006).

Growing evidence has also revealed that the hydroxamate group is associated with low oral bioavailability, poor *in vivo* stability, and undesirable side effects (Mulder and Meerman, 1983; Vassiliou et al., 1999; Suzuki et al., 2005). It has also been shown that the hydroxamate type inhibitor Batimastat promoted liver metastasis in a tumor free mouse model (Kruger et al., 2001). As such, it has become increasingly important to identify replacement groups that exhibit strong inhibitory action against HDACs. Therefore, the

What is the problem? Are there any existing solutions? What are their main limitations? And what do you hope to achieve?

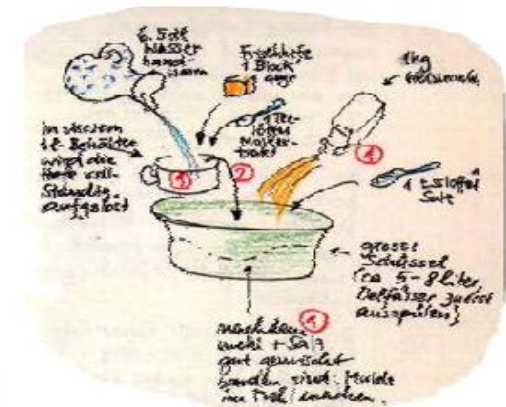
**Do not mix introduction with results, discussion, and conclusion**

of a compound in the early stage of the drug discovery process are of crucial importance. A successful drug-lead candidate must possess

# Methods

how was the problem studied

- Include detailed information, so that a knowledgeable reader can **reproduce** the experiment.



- However, use **references** and **Supplementary Materials** to indicate the previously published procedures.



ELSEVIER

# **Results** What have you found

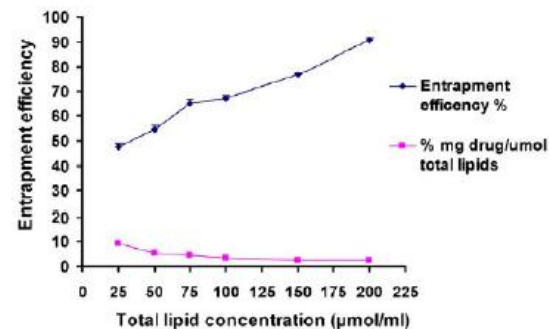
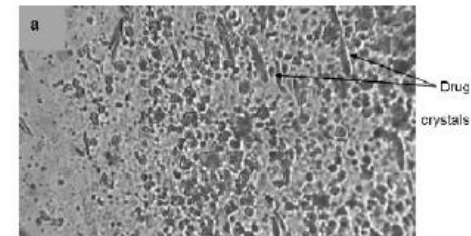
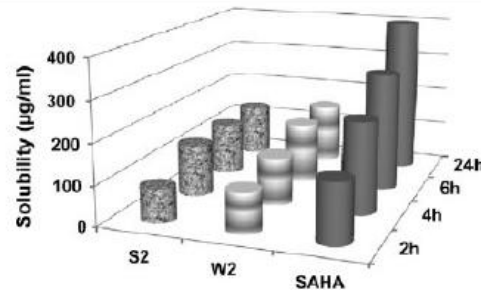
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- \* **Describe the major results and findings logically.**
- \* **Do not repeat all the information in the figures and tables.**
- \* **Emphasize the data which can support your discussion and conclusion.**



# Appearance counts!

- Un-crowded plots, symbols clear to read and data sets easy to discriminate.
- Scale bar on photographs.
- Use color ONLY when necessary.
- Do not include long boring tables!



# Discussion What the results mean

- Here you SELL your data!
- Discussion to correlate with results, but don't repeat results
- Put your results into perspective with previously published data

**ATTENTION:** DON'T ignore work in disagreement with yours  
– confront it and convince the reader that you are correct



# Watch out for the following

---

- Don't exaggerate
- Be specific (say "48 degrees" instead of "higher temperature")
- Avoid sudden introduction of new terms or ideas
- Speculations on possible interpretations are allowed. But these should be rooted in fact, rather than imagination.
- Check logic and justifications

# Conclusions

How the work advances the field from the present state of knowledge

Provide a clear scientific justification for your work!

**ATTENTION: DON'T repeat the abstract**

What have you shown?

What does it mean for the field?

In summary, we have demonstrated that the mercapto-acetamide-based HDACIs possess favorable solubility, lipophilicity, permeability and plasma stability features as compared to recently FDA approved drug Vorinostat (SAHA). Based on these findings, we assume that these compounds could sufficiently be absorbed by the intestinal tract. However, further studies are needed in order to determine the pharmacokinetic disposition of these compounds.

Indicate possible applications and extensions, if appropriate



# References

- **Typically, there are more mistakes in the references than any other part of the manuscript.**
- **It is one of the most annoying problems, and causes great headaches among editors...**

- Cite the **main** scientific publications on which your work is based
- Do not inflate the manuscript with too many references

**30-40 references** are appropriate for a **full text article**

- Avoid excessive self-citations
- Avoid excessive citations of publications from the same region

# Some tips

---

- \* Carefully study the comments and prepare a detailed letter of response.
- \* Consider reviewing as a discussion of your work.
- \* Learn from the comments, and join the discussion: Provide a scientific response to the comment you accept; or a convincing, solid and polite rebuttal to the point you think the reviewer is wrong.

# Comments

**Physical implausibility of studied system ..... Given that the situation examined by the authors in this paper will never occur in real systems, I have no choice but to recommend rejection.**


**Reply:** We have to admit that using the Izbash equation to describe non-Darcian flow in the whole aquifer is not exactly correct in real systems. As we discussed in our previous paper (Wen et al. 2008b, Two-region non-Darcian flow toward a well in a confined aquifer), the power index  $n$  may decrease from 2 to 1 as the distance goes to infinity in a real word. In other words,  $n$  might be a function of the distance rather than a constant. The problem will be very difficult to be solved if using such a variable  $n$  values. Actually, in some cases, as long as the Renolds number does not change for several magnitudes, it is possible to use a constant  $n$  to capture the flow system in the whole aquifer. We have added a discussion part to discuss this issue in the revised manuscript, please see p. 26 & 27.

# ATTENTION!

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- \* **DO NOT** gamble by scattering your manuscript to several journals.
- \* Only submit **once!**
- \* International ethics standards prohibit multiple/simultaneous submissions, and Editors **DO find out!**



doi:10.1016/j.sigpro.2005.07.019  Cite or Link Using DOI

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**RETRACTED: Matching pursuit-based approach**



Available online 24 August 2005.

This article has been retracted at the request of the Editor-in-Chief and P <http://www.elsevier.com/locate/withdrawalpolicy>.

Reason: This article is virtually identical to the previously published article [algorithm for SNR improvement in ultrasonic NDT](#), *Independent Nondestructive Testing International*, volume 38 (2005) 453 – 458 authored by [REDACTED]

**The article of which the authors committed plagiarism: it won't be removed from ScienceDirect. Everybody who downloads it will see the reason of retraction...**

the echoes issuing from the flaws to be detected. Therefore, it cannot be cancelled by classical time averaging or matched band-pass filtering techniques.

Many signal processing techniques have been utilized for signal-to-noise ratio (SNR) improvement in ultrasonic NDT of highly scattering materials. The most popular one is the split spectrum processing (SSP) [1–3], because it makes possible real-time ultrasonic test for industrial applications, providing quite good results. Alternatively to SSP, wavelet transform (WT) based denoising/detection methods have been proposed during recent years [4–8], yielding usually to higher improvements of SNR at the expense of an increase in complexity. Adaptive time-frequency analysis by basis pursuit (BP) [9,10] is a recent technique for decomposing a signal into an optimal superposition of elements in an over-complete waveform dictionary. This technique and some other related techniques have been successfully applied to denoising ultrasonic signals contaminated with grain noise in highly scattering materials [11,12], as an alternative to the WT technique, the computational cost of the BP algorithm being the main drawback.

In this paper, we propose a novel matching pursuit-based signal processing method for improving SNR in ultrasonic NDT of highly scattering materials, such as steel and composites. Matching pursuit is used instead of BP to reduce the complexity. Despite its iterative nature, the method is fast enough to be real-time implemented. The performance of the proposed method has been evaluated using both computer simulation and experimental results, even when the input SNR (SNR<sub>in</sub>) is lower than 0dB (the level of echoes emitted from microstructures is above the level of the echoes).

**2. Matching pursuit**

Matching pursuit was introduced by Mallat and Zhang [13]. Let us suppose an approximation of the ultrasonic backscattered signals  $s[n]$  as a linear expansion in terms of functions  $g_i[n]$  chosen from an over-complete dictionary. Let  $H$  be a Hilbert

space. We define the over-complete dictionary as a family  $D = \{g_i; i=0, 1, \dots, L\}$  of vectors in  $H$ , such as  $\|g_i\| = 1$ .

The problem of choosing functions  $g_i[n]$  that best approximate the analysed signal  $s[n]$  is computationally very complex. Matching pursuit is an iterative algorithm that offers sub-optimal solutions for decomposing signals in terms of expansion functions chosen from a dictionary, where  $l^1$  norm is used as the approximation metric because of its mathematical convenience. When a well-designed dictionary is used in matching pursuit, the non-linear nature of the algorithm leads to compact adaptive signal models.

In each step of the iterative procedure, vector  $g_i[n]$  which gives the largest inner product with the analysed signal is chosen. The contribution of this vector is then subtracted from the signal and the process is repeated on the residual. At the  $m$ th iteration the residue is

$$r^m[n] = \begin{cases} s[n] & m=0, \\ r^{m-1}[n] + \sigma_{4m} g_{4m}[n], & m \neq 0, \end{cases} \quad (1)$$

where  $\sigma_{4m}$  is the weight associated to optimum atom  $g_{4m}[n]$  at the  $m$ th iteration.

The weight  $\sigma_m^*$  associated to each atom  $g_i[n] \in D$  at the  $m$ th iteration is introduced to compute all the inner products with the residual  $r^m[n]$ :

$$\begin{aligned} \sigma_m^* &= \frac{\langle r^m[n], g_i[n] \rangle}{\langle g_i[n], g_i[n] \rangle} = \frac{\langle r^m[n], g_i[n] \rangle}{\|g_i[n]\|^2} \\ &= \langle r^m[n], g_i[n] \rangle. \end{aligned} \quad (2)$$

The optimum atom  $g_{4m}[n]$  (and its weight  $\sigma_{4m}$ ) at the  $m$ th iteration are obtained as follows:

$$\begin{aligned} g_{4m}[n] &= \underset{g \in D}{\operatorname{argmin}} \|\langle r^{m-1}[n] \rangle\|^2 \\ &= \underset{g \in D}{\operatorname{argmax}} |\sigma_m^*|^2 = \underset{g \in D}{\operatorname{argmax}} |\sigma_m^*|. \end{aligned} \quad (3)$$

The computation of correlations  $\langle r^m[n], g_i[n] \rangle$  for all vectors  $g_i[n]$  at each iteration implies a high computational effort, which can be substantially reduced using an updating procedure derived from Eq. (1). The correlation updating procedure [13] is performed as follows:

$$\begin{aligned} \langle r^{m+1}[n], g_i[n] \rangle &= \langle r^m[n], g_i[n] \rangle \\ &\quad - \sigma_{4m} \langle g_{4m}[n], g_i[n] \rangle. \end{aligned} \quad (4)$$

---

Writing and publishing good papers is  
not that difficult! Just keep writing,  
don' t give up!

Welcome your  
paper!

submit to [gwse-iheg@188.com](mailto:gwse-iheg@188.com)

Thank you fou your attention!