How to Write and Publish Papers in English Journals

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What consists of a good paper:

- **Title:** be concise, specific and accurate.
- **Abstract:** Briefly state what you did, what you found and what you concluded. Avoid introductory sentences.
- **Introduciton:** provides an overview of the problem, relevant previous work, and state the goal of your study.
- **Data/Model/Simulations and Analysis Methods:** describe the datasets (including their sources), and/or models/simulations used in the study, and how you analyzed the data, especially those aspects that could affect your results and conclusions.
- **Results:** Describe your main new results through figures and tables in order to make your conclusions.
- **Discussions:** Compare your new findings with previous studies, discuss the broader implications of your new results and any unresolved issues for future studies.
- **Summary/Conclusions:** Summarize what you did and what found in this study and the main conclusions. Also mention the caveats in your study.

Abstract

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Example: (from Deser et al. 2004, J.Climate)

This study examines the tropical linkages to interdecadal climate fluctuations over the North Pacific during boreal winter through a comprehensive and physically based analysis of a wide variety of observational datasets spanning the twentieth century.

Simple difference maps between epochs of high sea level pressure over the North Pacific (1900-24 and 1947-76) and epochs of low pressure (1925-46 and 1977-97) are presented for numerous climate variables throughout the tropical Indo-Pacific region, including rainfall, cloudiness, sea surface temperature (SST), and sea level pressure.

The results support the notion that the Tropics play a key role in North Pacific interdecadal climate variability.

In particular, SST anomalies in the tropical Indian Ocean and southeast Pacific Ocean, rainfall and cloudiness anomalies in the vicinity of the South Pacific convergence zone, stratus clouds in the eastern tropical Pacific, and sea level pressure differences between the tropical southeast Pacific and Indian Oceans all exhibit prominent interdecadal fluctuations that are coherent with those in sea level pressure over the North Pacific. The spatial patterns of the interdecadal tropical climate anomalies are compared with those associated with ENSO, a predominantly interannual phenomenon; in general, the two are similar with some differences in relative spatial emphasis.

Finally, a published 194-yr coral record in the western tropical Indian Ocean is shown to compare favorably with the twentieth-century instrumental records, indicating the potential for extending knowledge of tropical interdecadal climate variability to earlier time periods.

Common Problems in Abstract:

- **Too many introductory sentences:** e.g., "Precipitation diurnal cycle is one of the most pronounced signal of the climate and weather. It affects many land-surface processes and thus is very important in Earth's climate." This kind of text belongs to Introduction, not Abstract!

- **Unexplained acronyms:** e.g., "…. The CAM3 model results show that tropical SST variations are the dominant forcing for the observed decadal changes in the EASM circulation. …". Need to spell out CAM3, SST and EASM before their first use.

- **Lack of specific information or results:**

  e.g., "…. We analyze hourly precipitation data from China to study the rainfall diurnal cycle. …" Better: "…. We analyze hourly precipitation data from 1990-2005 at 300 stations over China to quantify the rainfall diurnal cycle. …"

  e.g., "…. We found that streamflow of the Yellow River has decreased while that of the Yangtze river has increased. …". Better: "…. We found that streamflow has decreased by xx% in the Yellow River but increased by xx% in the Yangtze River from 1950-2005. …"

- **Too long:** describe only the important new results in Abstract.

Common Problems in Introduction:

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- ## Too many general statements:

e.g., "The East Asian Summer Monsoon is an important part of the climate system. It affects a large population in Asia. …"

This kind of text is common knowledge. They may be included in a thesis, but should be avoided in a scientific paper. Better go straight to the subject of the study, e.g., Dai and Wang (1999, JAS) start the Introduction with:

"Of the 342 W m^{-2} of solar radiation reaching the top of the atmosphere, about 168 W m^{-2} are absorbed by the earth's surface and 67 W m^{-2} are absorbed by the atmosphere (43 W m^{-2} by water vapor, 14 W m^{-2} by ozone, 7 W m^{-2} by clouds, and 3 W m^{-2} by O_2 and CO_2) (Kiehl and Trenberth 1997). This atmospheric solar heating, combined with upward eddy conduction of heat from the ground, generates internal gravity waves in the atmosphere at periods of the integral fractions of a solar day (primarily at the diurnal and semidiurnal periods). These waves cause regular oscillations in atmospheric wind, temperature, and pressure fields, which are often referred to as atmospheric tides …"

- **Lack of a comprehensive overview of relevant studies:** Some Chinese authors only read and discuss papers by a small group of people around them. The introduction needs to reflect current understanding of the subject in the literature, and thus it should cite and discuss all relevant studies, especially those new papers in English journals. This is to ensure that your study is an advance to our current knowledge, not a repeat of earlier studies. One can easily search online to find out many relevant studies, e.g., at Web of Science or Cambridge Scientific Abstract, etc.

- **Lack of a clear description of the problem:** state what have already been studied and known, what remains unknown, and what you try to achieve in your paper. State what's new about your paper compared with previously published ones (e.g., "This paper differs from previous studies in that ….")

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Do NOT try to say more than one thing at a time:

"... The EASM is influenced by the El Niño-Southern Oscillation (ENSO) (Wang et al. 2000), the rainfall anomalies show pronounced differences between developing and decaying ENSO years over East China (Wu et al. 2003), and the ENSO-EASM relationship also has experienced a significant decadal change, with the El Niño-stimulated-circulation weakening the EASM after the late 1970s (Wu and Wang 2002). …"

Break long sentence into shorter ones:

"... The EASM is influenced by the El Niño-Southern Oscillation (ENSO) (Wang et al. 2000), with the rainfall anomalies showing pronounced differences between developing and decaying ENSO years over East China (Wu et al. 2003).
Furthermore, the ENSO-EASM relationship has experienced a significant decadal change, as the El Niño-stimulated-circulation weakens the EASM after the late 1970s (Wu and Wang 2002). ..."

Incorrect use of "which":

"In a word, the whole soil moisture profile can be improved greatly by assimilating microwave brightness temperature which provides soil moisture information only in the top few centimeters, which provides a promising solution for soil moisture assimilation for climate studies."

Do NOT make claims without citing references:
".... Some studies show that soil moisture's effect on the atmosphere is secondary only to that of sea surface temperature (SST) on a global scale and even exceeds SST's effect over land.   ..."

Avoid redundance:
".... We used the Community Land Model version (CLM3) to …. The Community Land Model is a …"

Statements on subject A. Statements on subject B. Statements on subject A again!

- **Need to provide references or sources of data sets or models or simulations:** Citing correct refs. or data sources gives proper credits to other people who deserve them by making the data or models available to you! It is *unethical* not to give proper credits to your colleagues in the fields, even if is unintentionally.

Example 1: give proper credits

Qian (2006) modified the precipitation data from Chen et al. (2002). Dai (2008) used the modified data set from Qian (2006), but he still should cite Chen et al. to give them proper credit, e.g., like: *"We used the data set from Qian (2006), who derived it by modifying the data from Chen et al. (2002)."*

Example 2: avoid copying content from other studies

Dai (2008) used a method from Smith (2001). Dai should cite Smith (2001), briefly describe it, but should not copy the details including equations from Smith (2001).

- **Need to provide enough details about your method, clearly state your assumptions, and provide justification for your assumptions and choices:**

    - **How did you grid your station data and whether the results are sensitive to the grid size you chose?**

    - **Why did you choose to use one particular monsoon index among many indices in the literature?**

    - **You chose to use NCAR/NCAR reanalysis, but does the ERA-40 show similar results?**

    - **Are your results sensitive to your choices of data sets, data periods, models, grid resolution, averaging, cutoff criteria, or seasons?**

    - **In many cases, one can answer these questions by performing some extra tests.**

    - **If there is something you *can* do to improve your paper, you should always do it! The reviewers and readers will know whether you are lazy or not!**
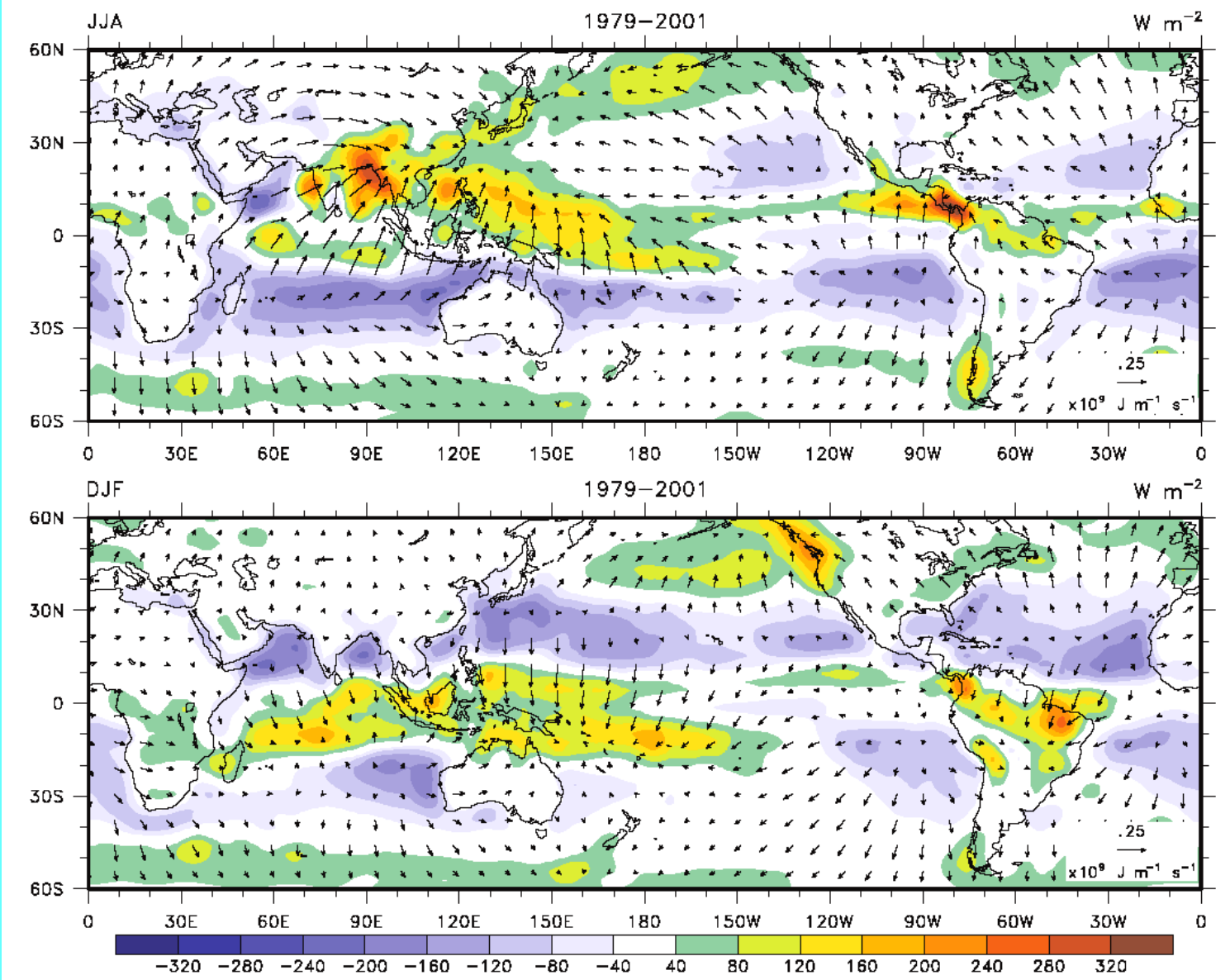
Common Problems in Result Section:

- **Don't know how to design the figures:** figs. should be chosen and designed to support the points you want to make. They should be informative, efficient, and easy to read. NCL is a free software that can make all kinds of plots and also do scientific calculations. **Graduate students should learn to use NCL!**
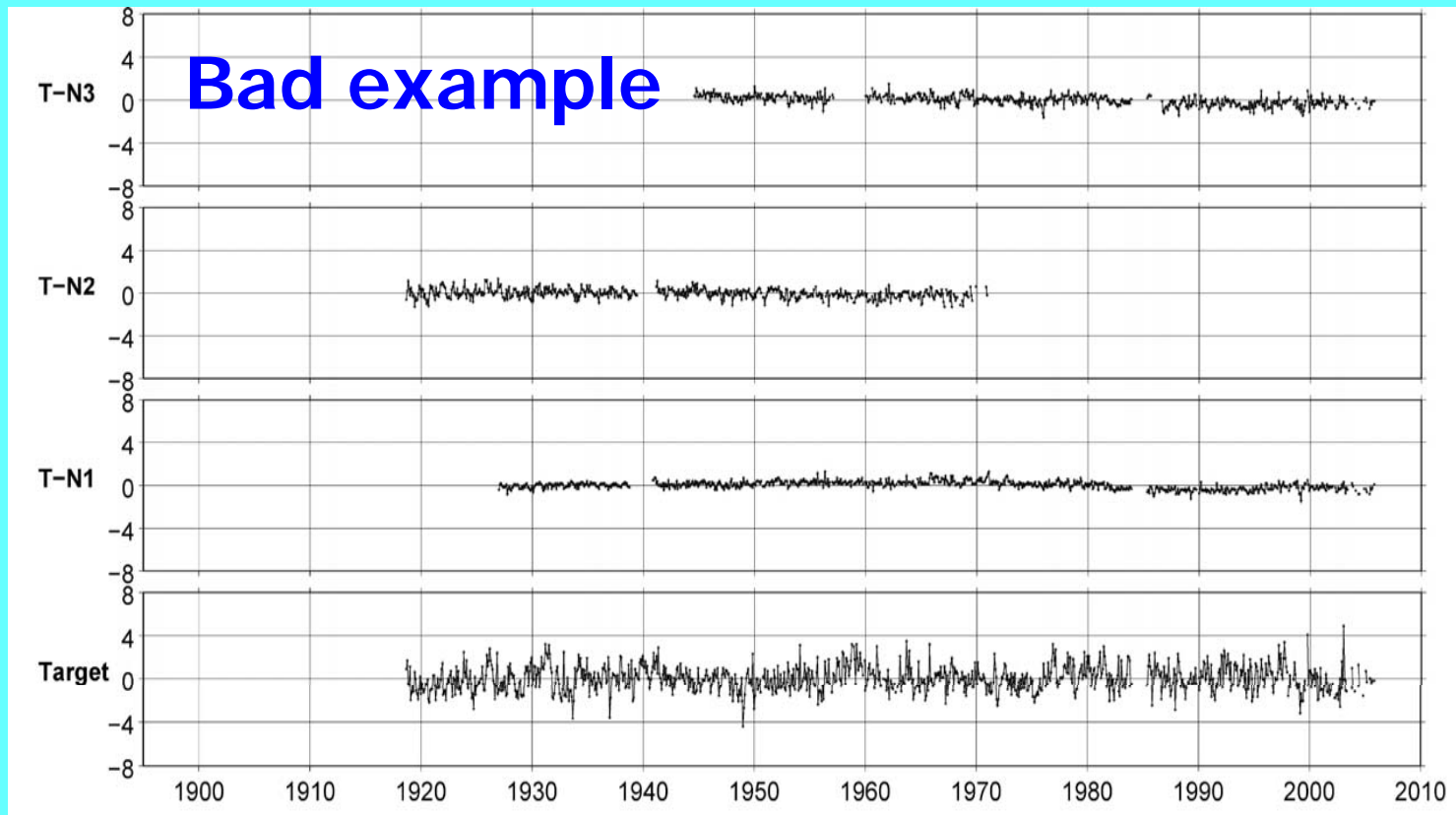
A Better Example of Line Plots
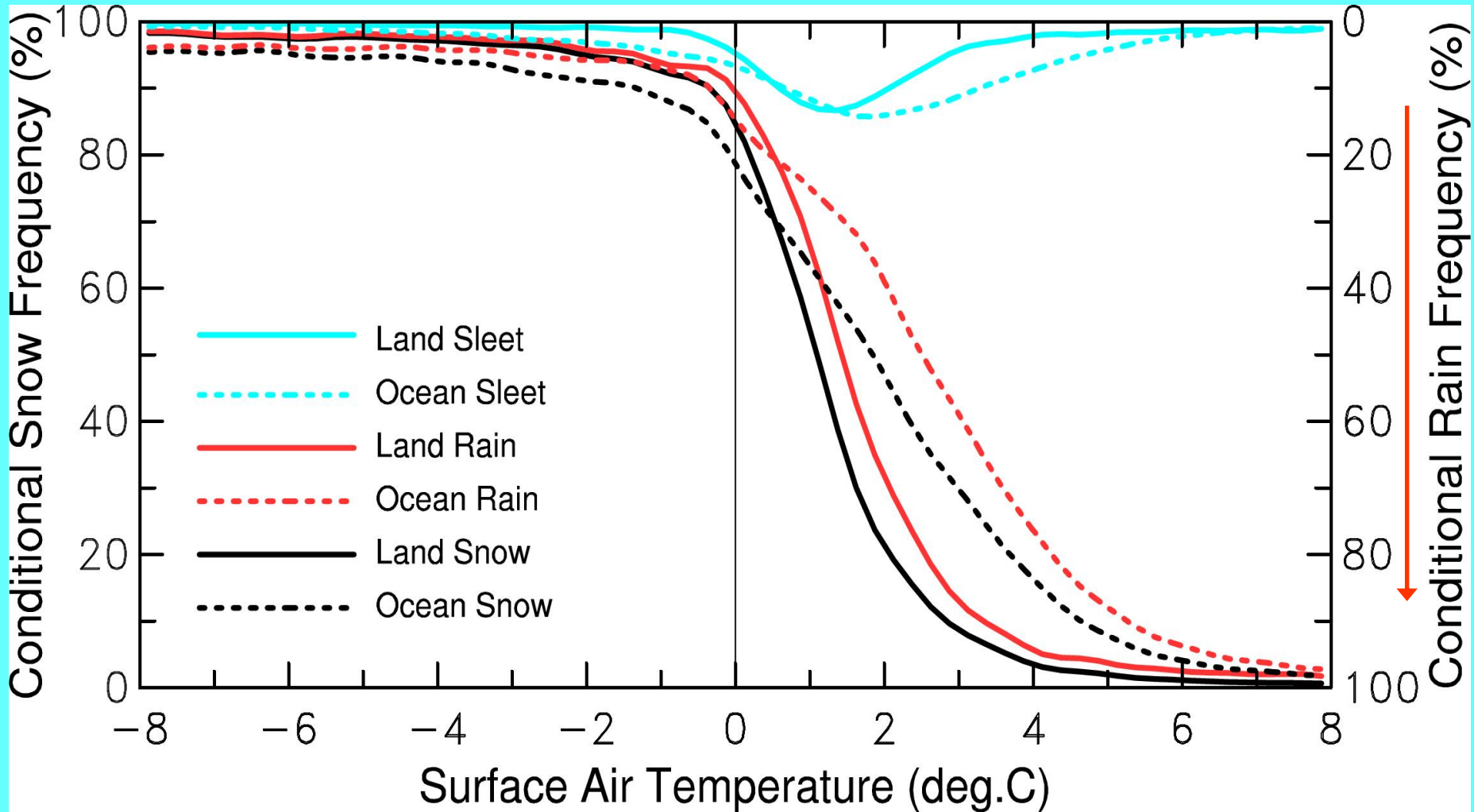
A Good Example of Map Plots

- **Don't know how to describe figures:** focus on the main features, **relate your results to previous studies**, but put lengthy discussions in a separate Discussion section.

"Figure 1 shows that …

Figure 2 shows that …

Figure 3 shows that …   "

Better to alternate the style, e.g., (from Deser et al. 2004, *J. Climate*):

"The time series of the precipitation difference between Alaska (55°–60° N, 160°–135° W) and Japan (32.5°–47.5° N, 130°–146° E) is shown in Fig. 4 together with the NPI. The precipitation record exhibits a high degree of similarity to the NPI; their correlation coefficient is 0.66 based upon data smoothed with a three-point binomial filter and is a maximum at 0 lag. The interdecadal regimes evident in the NPI are also apparent in the precipitation difference record, demonstrating the impact of large-scale atmospheric circulation variations upon climate on both sides of the Pacific.

Figure 5 shows epoch difference maps for winter air temperature and SLP. Interior Alaska and northwestern Canada are cold when the Aleutian low is weak, consistent with the results of Minobe (1997) based upon individual station records. The western North Pacific Ocean, on the other hand, is relatively warm, mainly in the region of reduced westerly wind strength, consistent with an equilibrated response to the underlying SST change (Fig. 6) due to diminished upward turbulent energy fluxes at the sea surface and cold advection by anomalous Ekman currents (cf. Miller et al. 1994). The time series of air temperature over Alaska and northwestern Canada (51°–70° N, 175°–100° W) is shown in Fig. 4 . Like the precipitation difference record, it exhibits strong support for the interdecadal regimes evident in the NPI; the correlation coefficient between the air temperature record and the NPI is 0.74 based upon data smoothed with a three-point binomial filter and is maximum at 0 lag.

Epoch difference maps for SST based upon the extended winter season, January–May, are shown in Fig. 6. We use the extended winter season for SST in view of the fact that the correlation between the leading principal component time series of monthly SST anomalies over the North Pacific [termed the Pacific (inter) decadal oscillation (PDO) by M97], …"

Common Problems with Discussions

- **Many papers lack discussions:**

 One should try to compare his/her results with previous studies, discuss the implications of the findings but avoid pure speculations, and point out caveats in his/her study and the issues that need further investigations. This can be done either in a separate Discussion section or included in the Summary/Conclusion section as concluding remarks.

- **A good paper always put its findings in the context of previous studies on the same subject.**

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• **First summarize what you did:**

e.g., "We **have analyzed** CAM3 ensemble simulations from 1950-1999 forced separately by observed tropical and global SSTs and greenhouse gases to quantify their individual effects on EASM on decadal time scales. …"

• **Then summarize your main results/new findings:**
e.g., "We found that the CAM3 model can reproduce most of the observed decadal changes in EASM circulation when forced by observed tropical SST variations. …"

Commons Errors in Choosing the Incorrect Words:

- **get → obtain**: We obtained (NOT got) the reanalysis data from NCAR.

- **but → however**: However (NOT but), there are large differences on regional scales.

- **study → investigate, examine, etc.**: We investigate (NOT study) the mechanisms underlying the SST-rainfall interactions.

- **avoid using quite, fairly, absolutely, much**: Our results are quite/fairly (NOT needed) reasonable. These simulation biases result in the northward shift of the rain-belt, so that the simulated precipitation is much (NOT needed) more than the observed over North China.

- **Less vs. lower, little vs. few**: The correlation coefficients are lower (not less) than … There are few (not little) studies on ….

How to Choose a Journal for Submission

• **For short papers, consider** *Geophysical Research Letters*: *GRL* is fast and can reach a wide range of readers

• **For regular research articles, consider AMS or AGU journals, such as *J. Climate, J. Atmos. Sci., JGR*, etc.**

• ***Climate Dynamics* has no page charges and no color charges, and it is relatively fast.**

• **Other well-respected journals: *Q. J. R. Met. Soc., Tellus, J. Met. Soc. Japan*, etc.**

How to Choose Potential Reviewers

- **Editors often have a hard time finding reviewers;**

- **So your suggestion of potential reviewers will be helpful to the Editor;**

- **List 4-6 people whose work is cited in your paper and who are familiar with your work but normally not colleagues from your own institution or someone collaborated with you recently;**

- **If you would like someone to be a potential reviewer, you should cite his/her recent paper(s) relevant to your study!**

How to Handle Review Comments

- **First, you should have a proper attitude:**

  - **Remember that reviewers spent time and efforts to read your paper and provide comments;**
  - **Most review comments are fair and constructive.**
  - **If a reviewer had a hard time understanding your paper, other readers will likely have problems too.**
  - **By asking critical questions, reviewers usually try to help you improve the manuscript rather than give you a hard time.**

- Second, try to address all the concerns and questions raised by the reviewers, including performing new calculations or simulations. You need to convince the reviewer that you made a genuine effort to address his/her concerns, rather than arguing and making excuses.

- Summarize the major revisions in the cover letter to the Editor, and attached a detailed, point-by-point response to reviewers' comments;

- Remember that the reader of the paper will not see your response to the comments, so include important new discussions in your paper too;

- Again, if there is something (e.g., new tests, analysis of new data) you CAN do to improve the manuscript, you should always DO it.

How to Write and Publish in English Journals:

- **Search and read all relevant papers on a subject;**
- **Find an aspect that you can improve current knowledge on the subject;**
- **Analyze data and/or model simulations and produce figures that can support your ideas and conclusions;**
- **Write up a draft manuscript to describe the problem, your work and your new findings;**
- **Read your manuscript a few times to correct any errors, delete unnecessary words or sentences, and improve organization of the paper;**
- **Ask your co-authors or colleagues to read the manuscript and provide feedbacks;**
- **Revise the manuscript and make changes to the citation and ref. format before submission; and**
- **Make genuine efforts to address reviewers' concerns.**