

# A Form for Referees in Theoretical Computer Science\*

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September 20, 2007

## 1 Introduction

The Referee's Form is a pdf document designed to help referees communicate more clearly with Editors. It is *not* intended to replace the formal written report, but is intended as a clear, concise synopsis. The first page of the form is for the Editor's eyes only, but the second page is intended to be forwarded to the author. A brief explanation of each of the responses to the form items follows.

**1 For the Editor:** This page will not be shown to the author.

**1.1 Recommendation:** This question records your recommendation as to whether the paper should be accepted. Of course, the Editor need not necessarily agree with your opinion. However, it is important that you express one clearly and unambiguously.

1. *Accept:* The paper should be accepted in its current form without further debate.
2. *Accept, advise changes:* The paper is acceptable, but there are some changes that would improve the manuscript. Acceptance need not be contingent on these changes.
3. *Accept contingent on changes:* The paper is acceptable contingent on some changes being made. If the Editor can verify that these changes have indeed been made, a second round of refereeing may not be necessary.
4. *Revise and re-referee:* The authors should be invited to submit a revised manuscript. A second round of refereeing is strongly recommended.
5. *Combine with simultaneous paper:* The results were discovered more or less simultaneously by others. It is recommended that all of the researchers involved pool their resources and produce a single paper.
6. *Cannot be refereed properly:* Full refereeing was not possible due to major technical and/or presentational difficulties. The authors must address these problems and resubmit the paper.
7. *Paper not publishable in this journal:* The paper may be suitable for publication, but not in this journal. Reasons may include scope, interest, or quality.
8. *Paper not publishable:* The paper is not publishable in any form in any journal.

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**1.2 The Referee:** This group of questions requires you to evaluate your effectiveness as a referee. It is not intended to be used to grade your performance, but rather to enable the Editor to compare the weight of your opinion with that of other referees who may have different ideas about the paper you are refereeing.

**1.2.1 Competence of Referee:** How competent are you in the area of specialization of the paper? This refers the specific area (such as “lower bounds for PRAMs”), rather than the general area (such as “parallel computation”). It may be assumed that the Editor has chosen you as referee because of your expertise in the general area, but he or she may not be fully aware of your level of expertise in the specific area.

1. *Expert:* I consider myself to be an expert in the field.
2. *Well-versed:* I have made contributions to the literature, and keep up with the latest results on a fairly regular basis,
3. *Interested:* I usually read the literature, but may not be completely up-to-date.
4. *Competent:* I am capable of reading the literature, but I am not completely familiar with it.

**1.2.2 Confidence Level:** How confident are you in your opinions?

1. *Very confident:* I am almost certain about my evaluation.
2. *Confident:* I am sure about my evaluation (beyond reasonable doubt).
3. *Reasonably confident:* I believe my evaluation to be correct.

**1.2.3 Effort Spent:** How much effort did you spend refereeing this paper? It is important that you indicate to the Editor how much time you spent, so that he or she can tell whether you did a cursory job or a detailed job. It also indicates how difficult the paper is to read and understand.

1. *Great:* It took a great deal of time and effort.
2. *Reasonable:* It took time and effort, but not exceptionally so.
3. *Minor:* It took very little time or effort.
4. *Almost none:* I was able to read it almost effortlessly.

**1.2.4 Comprehension:** How well do you understand the paper?

1. *Understand perfectly:* I understand all of the details.
2. *Understand majority:* I understand almost all of it.
3. *Understand ideas:* I understand the main ideas.
4. *Slightly confused:* I found the paper slightly confusing.
5. *Very confused:* I don’t understand much at all.

**1.2.5 Details Checked:** How much of the details did you check?

1. *All details:* I checked all of the details in the paper.
2. *Most details:* I checked most of the details and believe the rest to be straightforward.
3. *Enough details:* I checked enough of the details to be convinced of the correctness or incorrectness of the results.
4. *At a high level only:* I checked mainly general structure and logic.

**2 For the Author:** This page will be sent to the author after the Editor has used it.

**2.1 The Results:** This section of the form requires you to evaluate the results independently of the presentation. This may not be easy since bad presentation may obscure good results.

**2.1.1 Significance:** How significant do you think the results are?

1. *Seminal:* A breakthrough that will stimulate a great amount of research.
2. *Interesting:* A paper that will stimulate great interest.
3. *Progress:* A paper that has made some progress on reasonably important questions.
4. *Incremental progress:* Progress has been made, but it is mainly technical in nature.
5. *Ancient history:* The field has moved on from results of this type.
6. *Mundane:* Anybody working in the field can figure out how to do this without much effort.
7. *Trivial:* At the level of a graduate student exercise.
8. *Cannot tell:* The paper is so badly written that I cannot tell what is in it.

**2.1.2 Originality:** How original are the results?

1. *Original:* The results are new and original.
2. *Simultaneous discovery:* The results appear to have been discovered more or less at the same time by other researchers.
3. *Small twist to known work:* The work consists mostly of what is known, with perhaps a small amount of new results.
4. *Already published by authors:* The authors appear to have already published these results in a refereed journal.
5. *Already published by others:* The authors appear unaware that the results have been previously published.
6. *Folk theorems:* Everybody knows these results.

**2.1.3 Proofs:** How do you rate the proofs themselves?

1. *Beautiful:* The author has spent a lot of time on form and technique.
2. *Pretty:* They are very good, but not works of art.
3. *Serviceable:* They are satisfactory, but not outstanding.
4. *Ugly:* They are clumsy and inelegant.

**2.1.4 Proof Techniques:** How do you rate the proof techniques used?

1. *Deep:* The paper invents and applies new mathematical techniques.
2. *Innovative:* The paper uses ordinary methods in an unheard-of way.
3. *Clever:* The paper uses ordinary methods in a clever and non-obvious way.
4. *Elegant:* The paper uses standard techniques to prove interesting new things.
5. *Workmanlike:* The proofs are not difficult, but are competently done.
6. *Simple:* The proofs are straightforward enough for a reasonably well-trained researcher to be able to duplicate them from a statement of the theorem alone.
7. *Trivial:* The proofs are obvious.

**2.1.5 Correctness:** Do you believe that the results are correct, and how strongly do you feel about your opinion?

1. *Correct*: I am certain they are correct.
2. *Correct beyond reasonable doubt*: I think that they are correct, but there might conceivably be subtle flaws that I have missed.
3. *Probably correct*: They seem right, but I am not willing to certify their correctness.
4. *Probably incorrect*: They seem wrong, but I haven't located specific flaws.
5. *Proofs wrong*: The proofs contain flaws that can probably be patched to give results identical or similar to those claimed.
6. *Results wrong*: The proofs contain flaws that I believe may be insurmountable.
7. *Cannot tell*: The paper is so badly written that I cannot tell whether the results are correct without redoing the authors' research.

**2.2 The Paper:** This group of questions requires you to evaluate the presentation independently of the results.

**2.2.1 Accessibility:** What level of training is necessary to read the paper?

1. *Expert*: Somebody who is an expert in the specific area of the paper.
2. *Specialist*: Somebody who works in the general area of the paper.
3. *Theoretical computer scientist*: Most theoreticians, with some effort.
4. *Computer scientist*: Even a non-theoretician, with some effort.

**2.2.2 Presentation:** How well is the paper organized and written?

1. *Almost flawless*: The paper is almost perfect.
2. *Polished*: Very little needs to be done.
3. *Adequate*: The paper reads reasonably well, but needs to be polished.
4. *Rough*: The paper does not read well.
5. *Incomprehensible*: The paper reads so badly as to render understanding impossible.

**Density:** Is the length of the paper justified by its contents? It should be terse, but not too terse.

1. *Too long*: The paper is far too long for the weight of material. It must be condensed.
2. *Adequate*: The length of the paper is about right for the weight of material.
3. *Terse*: The material is nicely terse.
4. *Too terse*: It is so terse that most readers will find it heavy going. It should be expanded.

**2.2.4 Missing Proof Details:** All proofs have gaps. Can the reader reasonably be expected to fill in the missing details?

1. *Probably Wrong*: The gaps in the proofs probably hide errors.
2. *Often incomprehensible*: There are many large gaps that render the paper incomprehensible.
3. *Requires great effort*: The gaps can be filled in with great effort.
4. *Requires effort*: The gaps can be filled in with a reasonable amount of effort.
5. *Requires small effort*: The gaps can be filled in with a small amount of effort.
6. *Requires no effort*: There are no gaps, because the material is too simple for that.
7. *Too much detail*: The paper goes into far too much detail and leaves nothing for the reader.

**2.2.5 Technical Writing:** Does the Abstract truly abstract the essential contribution of the paper? Is the author's grammar, syntax, semantics, and spelling correct? Does the Introduction adequately introduce and motivate the topic? Does the author describe the problem succinctly yet completely? Are the references reasonably complete and accurate? Does the title adequately describe the paper?

1. *Excellent:* Of a very high standard.
2. *Good:* Of a high standard.
3. *Adequate:* Acceptable, but could be improved.
4. *Substandard:* Needs some work to bring it to an acceptable standard.
5. *Inadequate:* Needs a lot of work to bring it to an acceptable standard.
6. *Very bad:* Should be completely redone.
7. *Missing:* Completely absent from the paper.

## 2 Further Reading

Readers who require further advice on the refereeing process in theoretical computer science can consult Parberry [1, 2, 3] (and the references contained therein).

## References

- [1] I. Parberry. A guide for new referees in theoretical computer science. *SIGACT News*, 20(4):92–109, 1989.
- [2] I. Parberry. A guide for new referees in theoretical computer science. *Bulletin of the EATCS*, (40):511–530, 1990.
- [3] I. Parberry. A guide for new referees in theoretical computer science. *Information and Computation*, 112(1):96–116, 1994.