

A proposal to revise Sigmetrics submission for inclusion in PACM series

Executive summary: Across CS there is increasing questioning of the conference-style publication model, which provides little flexibility in publication deadlines, pushes reviewers at conferences to look for “reasons to reject” often rejecting interesting papers for flaws that could be addressed on revision, and duplicates effort of both reviewers and authors due to the need to prepare and review both conference and journal versions of paper. These issues are especially challenging for the SIGMETRICS community, where papers typically have reviewers with very different perspectives (systems vs theory) and so differences in opinion make it easy to find reasons to reject papers that attempt to straddle disciplinary lines -- exactly the papers SIGMETRICS is interested in -- and where conference papers are already long and deep so publishing journal versions of the work is difficult. In this document, we lay out a proposal to change the submission and review processes for SIGMETRICS to address these issues. In short, we propose to turn SIGMETRICS process to resemble more a journal. Some conferences, e.g., VLDB and SIGGRAPH, have adopted similar strategies with success -- leading to increased visibility and community size in the case of VLDB. It is likely that other conferences will follow suit, but SIGMETRICS still has the opportunity to achieve first-mover advantage with such a shift.

1. The proposal in a nutshell

Overview: We propose to move to a model where:

- The Sigmetrics conference has 4 submission deadlines each year: Nov. 15 (as usual), Feb. 15, June 15, and Aug 15.
- Every paper accepted to the Sigmetrics conference during one of these 4 submission periods is invited for a presentation at the following Sigmetrics conference.
- Every paper accepted to the Sigmetrics conference will be published as part of a newly created **Proceedings of the ACM Series on Computing Systems Modeling, Measurement and Evaluation**.
- We offer authors a possible option to “opt-out” of PACM publication, if they wish the paper presented at the conference but not published in PACM. Such papers will appear as 1p abstract inside the conference companion publication. This allows those authors who wish to present at SIGMETRICS but pursue other journal publication.

Quick Discussion of pros and cons: This proposal is a major change for the Sigmetrics community. The main advantages are for the authors to benefit from multiple deadline to plan their works, a journal-style reviewing with revision, and an archival publication immediately connected to a presentation of their work to a broad and relevant audience. We hope that our community can be more inclusive as papers will be judged primarily for their own merit (and less a comparison with other submissions of that year) with the possibility to accept after revision those promising paper that would be fully satisfactory if they could address one point that is currently missing. Finally, we hope that although it probably increases the load on PC chairs, they can benefit from the extra flexibility of a dynamic PC (where members could be added as

new expertise are required, and members not providing substantial or constructive feedback can be revoked).

The main risk we envision is more of a ransom of success: how this change would impact other events like the IMC conference, IFIP Performance, or related journals such as TOMPECS and Performance Evaluation. We have discussed this potential change with members of the committees for each of those events and journals. The response was to welcome the possible change, especially if they can become partners. Opening a PACM Series would be an ideal way to keep the door open if those events, who have also slightly different focus in terms of topics, would like to eventually join the same model.

2. Detailed description of the new revised process

Submissions: Paper submissions will be handled much like they are currently, only there will be four submission points each year.

- Papers will be required to be no longer than 12 pages (excluding references), but authors are required to include any supplementary information to prove technical correctness in an appendix, with no length limit enforced. This appendix is to appear as electronic supplements upon publication and will be peer reviewed.
- To allow double blind review, author names and affiliations should not appear in submissions and bibliographic references should be made in such a way to preserve author anonymity.
- Any version of the work that appeared in an article with at least 6 pages is considered prior art, as is currently done for SIGMETRICS.
- No parallel submission of the work to other venues will be permitted during the time the paper is under review.

Reviewing: To manage reviewing of the papers, we will maintain the structure of the current SIGMETRICS conference, with two PC chairs and a large program committee that is called upon to review papers.

- The key difference is that the duties of the PC and the PC chairs will continue year round, and there will be quarterly “discussion phase” to finalize the program. PC chairs will be asked to stay on in an advisory role for 6 months after their term in order to ease the transition to the new chairs, and to deal with revision of papers that were initially reviewed by them. Similarly, PC members are appointed for one year (hence, 4 issues) and are requested to be subsequently available to review papers that were recommended by them as revision. This is made to ensure continuity and consistency in the review process year round.
- Another difference stems from the fact that paper should be complete and include an appendix in addition to 12 pages for technical correctness. In order to allow this supplementary materials to be checked for technical correctness, the reviewers assigned to a paper will be divided into “regular” and two “heavy” reviews. Regular review are simply identical to current sigmetrics format, Heavy reviewer will be asked, in addition, to

check the correctness of the claims with regard to any information included in the appendix. Note that PC members will not have more than 3 or 4 heavy review assigned to avoid overload.

The process for reviewing is the following:

- **Anonymity:** Reviewing will be double blind.
- **Decisions:** The first round of reviews will be given to the authors within 2 months, in order to allow 1 month to complete a revision before the next submission deadline. The decisions will be one of the following
 - Accept: Accepted papers will be presented at the upcoming SIGMETRICS conference and appear as part of the proposed Proceedings of ACM Series published quarterly. As done in the past, the PC may require authors to make some minor changes enforced by a “shepherd” assigned to the paper among the PC members.
 - Revision: Papers where a revision is required will be given specific action points and can be resubmitted during either of the following two submission periods. If resubmitted they will be assigned the same reviewers. If not submitted during the following two periods they will need to be submitted as a new paper, which cannot occur within 12 months of the initial submission.
 - Reject: Rejected papers cannot be resubmitted during a 12 month period following the initial submission.
- **Opt-out:** Since appearing in a PACM series would prevent authors who wish to submit extended version of their work in an archival journal in other areas (e.g. OR, or another mathematical journal), authors are given an “opt-out” option. This allows Sigmetrics to be welcoming of papers from other areas. Note that the quality of presentation is ensured by the fact that papers went through the same selection process: Papers that exercise this option must still submit a full version of the paper for review, and will include only have a 1 page abstract (including a link to a full electronic version) to appear in the conference program online, as working paper. Neither the paper nor the 1 page abstract are to be published in the PACM journal (this rule applies to any other conference presentation including posters). The ACM EC conference has successfully used the model to welcome researchers from Economics over the past few years.
- **Conference presentation:** Participation and presentation at the conference is mandatory for all accepted papers (including papers that choose to have only a 1-page abstract appear). In case of delay for visa formality (for the February deadline) the authors will be offered to present the work at the following year. The authors may request an exception to this rule if all of them are prevented from travelling by health issues. Exceptions for financial reasons will only be considered from authors coming from developing countries and/or papers authored only by full-time students. In those last cases, extra effort will be done to accommodate this need using support from the conference travel grant.

Publication and Conference Organization: All papers that are accepted prior to April 1 (including those submitted before February 1 deadline) will be presented at the Sigmetrics conference in June. There will be four issues of the PACM title each year, corresponding with the four deadline periods. We expect that the number of accepted papers will increase, but not so much that the conference cannot remain single-track.

Other remarks: Note that as part of this proposal, paper may not be published in PACM SIGMETRICS as a “journal only” publication without an associated conference submission (in all cases) and presentation (with the exception of travel restriction imposed by health and visa constraints). Authors in our community who wish to pursue this have the option to submit their paper to ACM TOMPECS.

3. Discussion

This proposal is a major change for the Sigmetrics community. As such it is important to weigh the benefits with the risk.

In terms of benefits, the hope is that this change would enable the following:

- **For the authors**: Papers are submitted throughout the year instead of in one burst, easing deadline crunch for authors and spreading out the reviewing load for the PC. The awkward need to prepare both conference versions and journal versions of papers is removed. Journal quality reviews can be provided on a conference-style deadline based schedule
- **For the conference program and our community**: The focus of reviewing is hopefully switched from “reasons to reject” to “does this paper do something interesting”, with revisions allowing authors to fix more minor issues. The conference can be more inclusive by allowing a broader collection of papers to be accepted throughout the year.
- **For the conference organizers and reviewers**: The conference can include a larger PC that allows for a broader array of members from other communities. The PC can be more flexible and adapt to the areas papers submitted since members can be added during the year to broaden the expertise of the committee.

Finally, for SIGMETRICS, being a first-mover to move towards a “journal/conference” pairing could lead to increased submissions as many people prefer to avoid the need to prepare both conference/journal versions of their papers. It means the flagship conference and overall the SIG can benefit by becoming more attractive for work that span related areas.

Of course there are risks too.

- There will no longer be a face-to-face PC meeting where papers are compared and contrasted, and a feel of the overall bar is setup with all papers already received.

Response: PC discussion play an important role, and exchanges prior to decision should be kept and possibly increased. The improvements in allowing revisions and multiple submissions per year seem to outweigh this negative. Special care will be asked to PC chairs to ensure fairness across different submitting dates.

- The load on the PC chairs, while more spread out, is likely to increase.

Response: While larger, because of being more spread out it is likely still manageable. And additional flexibility between quarters (inviting new PC members etc.) can help.

- There will likely be an impact on the number and quality of submissions at related conferences such as MASCOTS and Performance. This change may make enemies of organizers of these conferences.

Response: If this change is successful it is likely that submissions to related conferences in the spring will drop in quality, assuming people would prefer to publish in Sigmetrics. While this is worth considering, it may be a net positive because it allows the broader community to get together at one main venue per year as opposed to being splintered across many. Hopefully, this will lead to a large sense of community in the performance evaluation field.

4. FAQ

Can we really get journal quality reviews on a shorter time-scale?

Our experience as journal editors is that the length of the deadline for reviews does not impact that quality. Basically, people spend 1-2 days on a review regardless of how long you give them and so longer review cycles provide no quantifiable benefit.

Won't all submissions still happen during the final period of the year?

There will certainly be a non-uniform distribution of submissions, but the other conferences that have moved in this direction have received a significant number of submissions during all periods of the year. The first two periods for each year (May and August) allow for revision to still appear the same year, and get early feedback to plan future submissions. The first last periods allow for the work to appear faster. Hence there are incentive all year round. One important fact is that under no circumstances should the PC make different bar depending on the date (e.g., accepting more papers in Nov. or February to “fill the program”). That should be an explicit commitment from PC chairs.

Won't this lead to accepting more papers, thus lowering our acceptance rate and hurting the prestige of Sigmetrics?

In the long run, it's not clear whether the acceptance rate would increase or decrease. This could lead to more submissions and thus more papers being accepted while keeping the acceptance rate the same. Additionally, if only a subset of the papers are given long talks, then that can add an extra degree of prestige to some papers. This happens, for example, at NIPS.

However, worrying about the acceptance rate may be misguided. It is the quality bar set for the papers not the acceptance rate that determines the prestige of the conference. For example, STOC/FOCS have much higher acceptance rates (25-30%) but are typically viewed as more prestigious not less prestigious than SIGMETRICS. Further, a small acceptance rate is what prevents us from growing, and so has a substantial negative effect.

In fact, by accepting only 15% of our papers we're saying that 85% of the work in the community is not high quality. We don't think that is true -- there are many papers that could be high impact that Sigmetrics misses currently and it would be quite beneficial to include these authors in the Sigmetrics community.

How should we go about transitioning to this new model?

First, in the short term, the conference will continue to operate as before except for the multi-deadline submissions and new revision process. The accepted paper will be published as part of a new dedicated PACM Series. This will add the extra advantage of reducing reviewing load since all papers will not have to be reviewed once again for a journal version. Once this model is shown to be successful, the PACM Series will be open for other conferences in related areas to contribute their papers. That, however, will be independent of SIGMETRICS program as a conference.

But, moving too slowly is definitely a risk as there is a clear first-mover advantage to setting up multiple submission points throughout the year. Also unless the change can be felt, habits won't evolve.

5. Alternative journal/conference models, and why we think they fit less well

- **Fast track/Special Issue:** Follow up the trends of avoiding duplication of reviewing work after conference process, by suggesting PC chairs to nominate papers.
Done by: many conferences (SIGCOMM, CoNEXT, INFOCOM)

Why we don't recommend that? This does not really address the issues that motivate our change. It eases the transition for some papers to journals, but does nothing to help authors with deadline crunches, encourage broadening of the community, or help the conference evolve.

- **Rollover option:** A single deadline as usual, but keep some rejected papers alive for a recommendation (either to the journal, with/without a slot in next year's conference), possibly after a revision.
Done by: SIGGRAPH (although they seem to evolve towards more integration)

Why we don't recommend that? The creates a noticeable lag for papers and potentially creates

a hierarchy of what acceptance means, confusing the meaning of a SIGMETRICS paper.

- **Multi-channel:** Nurturing a format where the conference receives other contributions such as selected from a journal.
Done by: SIGCOMM has a “best of CCR” session.

Why we don't recommend that? Does not address the issues we are focused on. Can be useful for broadening participation in the conference, but does not help with submissions, reviewing challenges, for papers appearing in Sigmetrics.

- **Deadline free submissions:** Basically run a conference like a journal, with a cut date to appear on a particular year.
Done by: VLDB (monthly review cycles).

Why we don't recommend that? This is similar to our proposal, but places more load and pressure on the PC and the PC chairs. It might be more uncomfortable for the authors after years of single deadline. Additionally, the added benefit beyond quarterly submissions seems minimal or even debatable (sometimes a 3-month deadline helps motivate people to finish on time).

6. Contact information

The following people who have been involved in the creation of this proposal volunteered to be point of contact to discuss this proposal any further.

Lead of this effort: Augustin Chaintreau <augustin@cs.columbia.edu>

SIGMETRICS Chair: Vishal Misra <misra@cs.columbia.edu>

SIGMETRICS Vice chair: Adam Wierman <adamw@caltech.edu>

SIGMETRICS Secretary & Treasurer: Niklas Carlsson <niklas.carlsson@liu.se>

SIGMETRICS Board of Directors: Giuliano Casale, A. Chaintreau, Nick Duffield, Cathy H. Xia