

LHCb Publication Procedure

This document describes the steps that should be followed for the publication of analyses using data from the LHCb experiment.

Members of the collaboration may independently publish papers relating to LHCb only if they refer to previously published data, and involve no use of software that has involved significant investment from the rest of the collaboration (such as the full Monte Carlo simulation, or reconstruction code). Papers that include projections for LHCb performance or sensitivity, should be sent to the Physics coordinator and Editorial Board chair for comments prior to being posted on the arXiv or submitted to the journal. Exceptions may be made to this rule for technical publications by authors from a subsystem of the experiment, on agreement of the Spokesperson.

The complete and detailed information about any analysis should be made available to the collaboration. Any analysis or results using data from the LHCb experiment must be reviewed, understood and approved by the collaboration before being disclosed outside the collaboration. In certain cases, where the work is predominantly carried out by yourself and is not controversial in nature, there are exceptions to this. These are:

1. for the use in a students thesis;
2. in events at regional level, involving participants from one or a limited group of states, which are under the responsibility of the relevant institute leaders;
3. in job applications and presentations associated with interviews;
4. in funding applications.

In all cases it should be made clear that figures/tables/numbers are not officially approved by LHCb. In cases where there is potential for controversy or signs of a major new result, the physics coordinator should be consulted prior to the event taking place.

The sequence of publication of an analysis can take two different approaches: one involves going directly for a publication, the other one with an intermediate conference report. The procedure described below reflects the sequence with a preliminary result. The flow diagrams at the end indicates where the process is made faster in case of going directly for a paper.

In a conference report, all figures and results should be marked as preliminary. Any new results shown in the presentation at a conference should be taken from the conference report. Only one set of preliminary results should normally be produced per analysis, before the final publication is submitted. Exceptions to the standard procedure can be decided by the Spokesperson.

An analysis that the proponents¹ wish to make public must first be presented at physics working group meetings. This is also where the initial discussions about whether to go directly to a paper or via a preliminary result should take place. A detailed internal LHCb analysis note (ANA) should be produced, describing all relevant aspects of the analysis. The description of technical details should be more explicit than in the eventual publication.

¹ The term “proponents” is used for the actual authors of the document, to avoid confusion with the full author list.

1. The decision that an analysis should proceed towards publication is taken by the Physics Coordinator, in consultation with the Spokesperson and the convener of the relevant physics working group. At this point an analysis page² should be set up by the proponents, providing supporting documentation. Two internal reviewers are assigned to the analysis by the Physics Coordinator, in consultation with the Spokesperson. The role of the reviewers is to ensure the high quality of all aspects of the analysis and publication. The reviewers should not be directly involved in the analysis being reviewed. The physics coordinator designates one of the referees as the chair of the review committee. The proponents nominates one or two contact authors who are responsible for all communication with the review committee, the Physics Coordinator and the Editorial Board chair.
2. The referees study the supporting documentation from the analysis page, interact with the proponents, and advise the Physics Coordinator of the status of the analysis.
3. A conference report (CONF) should be prepared which documents the preliminary result as a public document. This document should give a short outline of the analysis and document all numerical results, figures and tables that are intended to be shown in public. The Editorial Board chair nominates an additional referee with the responsibility to ensure the editorial quality and consistency with our previous publications.
4. When the Physics Coordinator is satisfied that the analysis is in a suitably mature state, the conference report is circulated to the collaboration and the analysis approval scheduled for a general LHCb meeting. The approval takes the form of a report from the reviewers followed by a presentation by the proponents. Taking into account the discussion at that meeting, the Physics Coordinator decides on approval of the analysis.
5. Following comments from the collaboration, the conference report is approved for public release by the referees and the Editorial Board chair. At this point the results from the analysis can be shown in public.
6. During the approval of the preliminary result, certain changes or additional cross checks might have been requested before the result can proceed to publication. When these are implemented and approved, an “approval to go to paper” presentation is scheduled at a general LHCb meeting. If changes are minor this may be replaced by a notification to the collaboration of the changes implemented.
7. Once the paper draft has been prepared by the proponents, the author list is defined, following the prescription set down by the LHCb Membership Committee. The author list will normally remain unchanged for any subsequent drafts of the same paper. It is the responsibility of the authors at this point to ensure clarity of presentation, the correct use of English, and that the style adopted for LHCb publications as set out in the guidelines for writing papers are adhered to.
8. The choice of journal for a physics publication is made by the Editorial Board chair in consultation with the Physics Coordinator and Spokesperson. It will be influenced by the potential impact of the result, the length of the proposed paper,

² The analysis page is implemented as a web page, accessible as a link from the CDS system that is used for circulating drafts. The names of the proponents of the analysis, and the internal referees, should be listed there. It should also include links to all presentations made concerning the analysis, and to any other supporting documentation, including the associated LHCb note. The analysis page should be updated to reflect any changes in the analysis as it proceeds to publication.

the balance and implementing any guidelines decided by the CB concerning Open Access, for example.

9. The Editorial Board reading and the final acceptance of the paper (see below) are scheduled at this point and should lead to the paper being ready for publication five weeks later.
10. The draft is circulated to the collaboration³, with a deadline for comments that should normally be two weeks later⁴. In addition, a number of institutes from the collaboration will be assigned the task of reading and commenting on a given draft, by the Editorial Board chair in consultation with the Spokesperson. The proponents should either implement the changes requested, or explain their reason for not doing so, to the satisfaction of the reviewers. In case of disagreement between proponents and referees the case will be considered by the Editorial Board, which will take the final decision, in consultation with the Physics Coordinator and Spokesperson.
11. The paper is considered at an Editorial Board reading, with proponents, reviewers and a sub-committee of EB-members present.
12. An updated paper draft is produced and circulated to the collaboration. The circulation period finishes with the paper seeking approval at the next Editorial Board meeting. The chair of the review committee is responsible for following up the implementation of any changes with the proponents. Members of the collaboration may withdraw their names from the author list by contacting the Editorial Board chair with an explanation of their concerns.
13. After implementation of changes from the Editorial Board, the document ready for submission is presented by the proponents at a general LHCb meeting, outlining the review process and any significant changes that have occurred. The decision on approval of the document for submission is taken by the Spokesperson, reflecting the conclusion of discussion at that meeting.

After approval and a final permission given by the Editorial Board chair, one of the proponents acts as contact author and submits the paper to the arXiv preprint server, and the journal. The Editorial Board chair and the review committee must be informed of any communication from the the journal and approve any answers before they are made.

Ulrik Egede
(for the Editorial Board)

³Collaborators who have left LHCb, but are still on the author list are also notified.

⁴ Comments to a draft, and the proponents' responses, should be entered into the CDS system for the draft, accessible to all authors.