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Tord Riemann, spokesperson of ZFITTER

## **Proposals for steps towards a resolution of the ZFITTER/Gfitter conflict**

### ***Preface***

The Ombudsman for Science in Germany was contacted by the ZFITTER spokesperson on 30 November 2011.

The ZFITTER collaboration is not involved in the investigation of the Ombudsman, although it is informed on the arbitration process.

The expectations by ZFITTER in the present situation are not completely met by the Arbitration Award of the Ombudsman of 3 July 2012.

The expectations by ZFITTER in the present situation are summarized in the one-page-memo „Memorandum on ZFITTER/Gfitter“ as of 4 November 2012 by Prof. A. A. Akhundov, Dr. A. Arbuzov, Prof. D. Bardin, Prof. P. Christova, Dr. S. Kalinovskaya, Dr. S. Riemann, Dr. T. Riemann et al., <http://zfitter.com/2012-11-04-memo-zfitter-gfitter-v23.pdf>.

A meeting „Zeuthen I“ was arranged on 11 May 2011.

In the present situation it might be helpful to have an informal, private meeting of J. Bluemlein, K. Moenig, T. Naumann, T. Riemann at Zeuthen on 20 November 2012, the meeting „Zeuthen II“.

### ***The proposals for the agenda of the meeting Zeuthen II on 20 November 2012***

The following proposals have been formulated by TR. They are not agreed upon with the ZFITTER collaboration, but one may assume that they express in general the spirit of ZFITTER.

They are not carefully polished.

It is proposed to discuss at the meeting Zeuthen II some opportunities to realize a subset of the ZFITTER expectations.

The present text is not foreseen to get public – beyond the foreseen participants of the meeting - without further refinement and/or without my explicit agreement on that.

### ***Facts***

0.

We might recognize that the four authors of Gfitter/GSM (dated Summer 2006 to Summer 2011) are:

*M. Goebel, J. Haller, A. Hoecker, K. Moenig.*

The fourteen authors of the Standard Model library of ZFITTER v.6.42 are:

*A. Akhundov, A. Arbuzov, M. Awramik, D. Bardin, P. Christova, M. Czakon, A. Freitas, M. Gruenewald, L. Kalinovskaya, A. Olchevsky, S. Riemann, T. Riemann, M. Bilenky, O. Fedorenko.*

The ZFITTER support group was active in 2006 and got dissolved in February 2012.

The main long term authors of ZFITTER - presently the ZFITTER collaboration - are:

*A. Akhundov, A. Arbuzov, D. Bardin, P. Christova, L. Kalinovskaya, A. Olshevsky, S. Riemann, T. Riemann (spokesperson).*

1.

We might agree on the fact that the C++ software package Gfitter/GSM makes substantial use of parts of the Fortran software package ZFITTER v.6.42.

See:

<http://zfitter.com/zfitter-code-in-gfitter.html> and  
<http://zfitter.com/gfitter-uses-175-functions-of-zfitter.txt> and  
<http://zfitter.com/gfitter-gsm-patches.html>

See also the package Gfitter\_July\_2011 which did not become public.

2.

We might agree on the fact that the use of ZFITTER v.6.42 in Gfitter/GSM was not known to the ZFITTER collaboration until March 2011. On 2 March 2011 the Gfitter package was downloaded by ZFITTER authors from a CERN software deposit, and it was also made available to ZFITTER on request by J. Haller on 3 March 2011. Both versions agree essentially.

The Gfitter/GSM package is proprietary until now. Few copies have been made available to interested persons.

3.

We might agree on the fact that no one of the Gfitter publications which used Gfitter/GSM made the use of ZFITTER v.6.42 evident.

<list of publications> See for this:

<http://zfitter.com/gfitter-publications.html>

If there is an exclusion from this statement:

<list to be created>

The use of Gfitter/GSM and publication of results includes also the creation of updated Gfitter fits to data, which were/are collected at the Gfitter homepages for public download.

4.

We might agree on the fact that the scientific relevance of the Gfitter publications is quite different.

We might focus exclusively on the period Summer 2006 to Summer 2011. See again:

<http://zfitter.com/gfitter-publications.html>

Main publications are: EPJC60(2009)543v1,v2,v3, diploma thesis (subm. 29 Feb 2008), arXiv:1107.0975v1:

<http://arxiv.org/abs/0811.0009v3> (with Erratum: <http://arxiv.org/pdf/0811.0009v4>)

[http://www-atlas.desy.de/theses/Goebel\\_dipl.pdf](http://www-atlas.desy.de/theses/Goebel_dipl.pdf)

<http://arxiv.org/abs/1107.0975v1>

(different paper: <http://arxiv.org/abs/1107.0975v2>, <http://dx.doi.org/10.1140/epjc/s10052-012-2003-4>)

The diploma thesis is not a Gfitter publication, but is put forward by a Gfitter author with claim that Gfitter/GSM has been created and applied to physics data by the diplomand.

Further, there are submissions in hep-ph.

Further, there are many talks with their slides available in the internet, some (about 18) of them are considered to be important by Gfitter and listed at

<http://gfitter.desy.de/talks.html>

There might be additional ones to be considered important; e.g. talk by M. Goebel in December 2007 or talk by J. Haller at CERN in February 2009. See e.g.:

<http://gfitter.desy.de/talks.html>

<http://project-gfitter.web.cern.ch/project-gfitter/>

And there are the updated plots at the Gfitter homepages which are not published elsewhere before.

5.

We might agree on the fact that two Gfitter publications – EPJC60(2009)543 and a diploma thesis - make use of text created by ZFITTER authors D. Bardin, L. Kalinovskaya, S. Riemann, T. Riemann without proper citation. The impression is made that the scientific contents of the formulae is due to the authors.

The amount is about 5 preprint pages.

See

<http://zfitter.com/zfitter-text-in-gfitter-publications.html>

## ***Estimations***

6.

Both collaborations declare that they respect the personal copyrights of the authors with their software, in accordance with paragraphs 12 to 14 of German Urheberrechtsgesetz.

For Gfitter authors this means that they violated the personal copyrights of ZFITTER authors.

7.

Both collaborations declare that they respect licence agreements.

For Gfitter this means that they violated the CPC licence

<http://cpc.cs.qub.ac.uk/licence/licence.html>

of ZFITTER hold by the authors (of the describing articles in CPC), dating back to 1989 and 2000, last updated 2006.

8.

The omissions consist of two elements:

- No correct citations of software and texts when used.
- The derived software Gfitter/GSM was not declared as interface to ZFITTER. Furthermore, the derived software was given to third persons: other Gfitter authors (not authoring Gfitter/GSM) and the ATLAS collaboration. Also to selected potential collaborators of Gfitter.

9.

The use of Gfitter/GSM by persons who are not authoring Gfitter/GSM violates by itself the ZFITTER licence.

10.

We do not discuss here the diploma thesis, because it is neither subject of the Arbitration Award nor authored by Gfitter. But we would like to mention that there is a problem to be solved.

## ***Actions***

11.

We might agree on the fact that several Errata are necessary.

Reason:

Scientific results, which have been used, have to be quoted.

Errata should contain not only the scientific information, but also an expression of regret that this happened.

<list of errata to be made>

Few of the Errata are urgent and mandatory, and many of them are easy to make.

12.

The Gfitter collaboration declares that they finished to use Gfitter/GSM in August 2011 completely.

So, there is no need to discuss the future use of that software after August 2011.

13.

Until now, the software Gfitter/GSM cannot be made public or given to third persons without the explicit agreement of the ZFITTER collaboration.

14.

A new Erratum for EPJC60(2009)543 is of utmost importance and is urgent.

It would resolve on sliding the problems around the EPJC Editors-in-Chief report which violates heavily the rules for treating hints on scientific misconduct when publishing in a Springer Journal:

[http://zfitter.com/Letter\\_Riemann.pdf](http://zfitter.com/Letter_Riemann.pdf)

It might have the following contents:

*The numerical results of the article EPJC60(2009)543 have been produced with Gfitter. The Standard Model library Gfitter/GSM is authored by M. Goebel, J. Haller, A. Hoecker and K. Moenig. It has been created by translating the Standard Model library of the Fortran package ZFITTER v.6.42 [refA, refB] into C++.*

*Additional features of the library are:*

*<list, references>.*

*The bulk of one-loop formulas in Appendix XXX has been taken over without substantial changes from YYY [refC] and from ZZZ [refD].*

*(Alternative: <list of formulas>)*

*We regret that we did not refer correctly to the original sources of software and text thereby making the impression that they were our own invention. We understand that Gfitter/GSM will stay proprietary in fulfillment of the CPC licence of ZFITTER.*

Compare:

Reference to MINUIT in the diploma thesis of M. Goebel:

*[49] F. James and M. Roos, Minuit: A System for Function Minimization and Analysis of the Parameter Errors and Correlations, Comput. Phys. Commun. 10, 343 (1975), Translation into TMinuit integrated into ROOT by R. Brun.*

15.

The fate of arXiv:1107.0975v1 is to be clarified.

<http://arxiv.org/abs/1107.0975v1>

It is often quoted, was accepted for publication in EPJC on 12 September 2011, but finally not published in EPJC. It has nothing to do with EPJC72(2012)2003.

<http://dx.doi.org/10.1140/epjc/s10052-012-2003-4>

The entry in spires makes this impression.

One opportunity might be an Erratum to EPJC72(2012)2003, where the authors explain and regret this.

A clean solution would be to explicitly divide the entry in spires into two entries:

- one entry that traces back to <http://arxiv.org/abs/arXiv:1107.0975> and gets a new revision v3
- another entry that traces back to <http://dx.doi.org/10.1140/epjc/s10052-012-2003-4>

The preprints have to be properly distributed among the two publications.

The author names (Ludwig versus Kennedy) are not identical, but this problem would be automatically solved.

16.

It is easy to rephrase the statements and slide collections on the Gfitter webpages appropriately.

17.

We might agree on the fact that the Gfitter webpages should comment on all this in appropriate form.

Do not forget: The responsibility for the webpages of Gfitter have CERN and DESY directorates.

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## ***Remarks***

18.

We would like to mention that also by now there is reason to assume that Gfitter uses ZFITTER without citation.

It is not realistic to assume that Gfitter uses a numerical grid, made by Japanese colleagues with approximate analytical formulas – and checked against ZFITTER by them, without checking the accuracy against ZFITTER after the inclusion into Gfitter again.

Reasons:

The Japanese software does not pretend to have the accuracy which is needed to consider electroweak 2-loop terms and/or QCD four-loop terms.

In this situation, either the Gfitter authors check and ensure this by themselves – using ZFITTER – or they cannot guarantee the accuracy they pretend to have.

It would be serious and fair to correct the habit in this respect.

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