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Agreement

on the integration of parts of the Fortran package ZFITTER into the c++ package Gfitter

between

ZFITTER:
A. Akhundov, D. Bardin, P. Christova, L. Kalinovskaya, S. Riemann, T. Riemann [spokesperson, tordriemann@googlemail.com] for the ZFITTER authors
[see http://zfitter.com]

Gfitter:
J. Haller, A. Hoecker [spokesperson, Andreas.Hoecker@cern.ch], K. Moenig for the Gfitter group
[see http://cern.ch/Gfitter]

1.
Gfitter acknowledges and respects the copyright [Urheberrecht] and licence rights on ZFITTER hold by
the ZFITTER authors.

2.
Gfitter expresses the interest to integrate parts of the Fortran package ZFITTER into the c++ package Gfitter and to make the integrated package available as an open source library.

3.
ZFITTER and Gfitter agree on the creation of a common, integrated sub-package Gfitter/GSM, to be co-authored by members of both groups and to be made available as open source software [with conditions of use; see below]:
The authors are:
A. Akhundov [ZFITTER], A. Arbuzov [ZFITTER], M. Awramik [ZFITTER], M. Czakon [ZFITTER], D. Bardin [ZFITTER], M. Bilenky [ZFITTER], P. Christova [ZFITTER], O. Fedorenko [ZFITTER], A. Freitas [ZFITTER], M. Goebel [Gfitter], M. Gruenewald [ZFITTER], J. Haller [Gfitter], A. Hoecker [Gfitter], L. Kalinovskaya [ZFITTER], K. Moenig [Gfitter], A. Olchevski [ZFITTER], S. Riemann [ZFITTER], T. Riemann [ZFITTER];
The responsibility of ZFITTER group members covers the correctness of the Fortran package ZFITTER v.6.42, and that of the Gfitter group members the programming of the c++ software Gfitter/GSM.

An Authors file contains the names of 14+4 authors in alphabetical order and the web addresses http://zfitter.com and http://cern.ch/Gfitter.
The ZFITTER or Gfitter group memberships and responsibilities are indicated, and the affiliations and/or email
addresses are given according to the proposals of authors.

The Authors file is attached to the email with this agreement as part of the attached sub-package Gfitter/GSM.

4.
The original sub-package Gfitter/GSM is defined by the software package Gfitter/GSM, delivered by J. Haller to T. Riemann [3 March 2011].
Gfitter states that this is the actual production code for calculations of Standard Model physics. It is used, among others, for the determination of the W and Z boson decay widths.
This version of sub-package Gfitter/GSM will be taken over unchanged and get labelled as of 3 March 2011.
Few necessary additions are mentioned in point 8 of this agreement.

The complete sub-package Gfitter/GSM is documented as attachment to the email with this agreement.

5.
The release of the sub-package Gfitter/GSM is based on the condition that excellent numerical agreement of Gfitter with ZFITTER is proven:
The numerical sample outputs of ZFITTER and Gfitter are part of the package; they agree with 8 digits for the following predictions:
- the mass of the W boson
- the effective weak mixing angle
- the 8 partial decay widths of the Z boson into neutrinos, electrons, muons, tau leptons,

up-quarks, down-quarks, c-quarks, b-quarks;
- the total decay width of the W boson.
The ZFITTER version [v.6.42 with specific flag settings] used for the comparison and the file with the numerical outputs from both packages have been be delivered by the Gfitter authors and are part of the open source sub-package Gfitter/GSM [for documentation].

The ZFITTER v. 6.42 and the two numerical outputs are attached to the email with this agreement as part of the sub-package Gfitter/GSM.

6. Licence and additional conditions of use

6.A.
Licence
The licence agreements for ZFITTER defined by "Computer Physics Communications" [see
http://http://cpc.cs.qub.ac.uk/summaries/ADMJ ,
http://cpc.cs.qub.ac.uk/summaries/ADMJ ,
http://cpc.cs.qub.ac.uk/licence/licence.html],
will also apply to the sub-package Gfitter/GSM.
Basically, it is demanded that "Publications which result from using the acquired program will reference the article in Computer Physics Communications which describes the program":
- D. Bardin et al., Comput. Phys. Commun. 133 (2001) 229, e-Print: arXiv:hep-ph/9908433v3 [hep-ph] (1 Mar 2000)
- A. Arbuzov et al., Comput. Phys. Commun. 174 (2006) 728, e-Print: arXiv:hep-ph/0507146v1 [hep-ph] (12 Jul 2005)
plus
- H. Flacher, Eur. Phys. J. C60 (2009) 543, Erratum: ..., e-Print: arXiv:0811.0009v4 [hep-ph] (20 Jul 2011)
and
that "No user or site will re-distribute the source code or executable code to a third party in original or modified form without the written permission of the author." [For ZFITTER `the author' is T. Riemann.]

6.B.
Additional conditions of use
ZFITTER allows and encourages since more than 20 years the linking of ZFITTER and the attaching of user interfaces without special permission. It is not foreseen that users modify ZFITTER or integrate it into other software because it represents benchmark calculations, and a proliferation of ZFITTER is not in the interest of the authors or of the physics community.
These conditions of use shall also be applied to the sub-package Gfitter/GSM:
Changes of Gfitter/GSM deserve the written permission by the spokespersons of ZFITTER and Gfitter, while linking and the addition of user interfaces are explicitely allowed.

7.
The licence file contains the contents of statements of paragraph 6.

It is attached to the email with this agreement as part of the attached sub-package Gfitter/GSM.

8.
Summary of the components of the sub-package Gfitter/GSM resulting from this agreement
- original Gfitter/GSM sub-package; version definition by date of 3 March 2011
- Licence file
- Authors file
- subdirectory Gfitter/GSM/doc with ZFITTER package v. 6.42 (18 May 2005) as it was used for the numerics
- also in subdirectory Gfitter/GSM/doc: a file with the two numerical sample outputs

9.
Since 2006, members of the Gfitter group are creating and using software derived from ZFITTER, and since December 2007 there are publications by the Gfitter group, or by members of it, without mentioning this use of ZFITTER and without quoting the 2 above-mentioned CPC articles [for this use].
Gfitter will issue Errata or replacements in the cases where it appears possible and reasonable.

10.
The validation of this agreement is performed by email exchanges of the 2 spokespersons, including into the lists of email recipients the main authors mentioned above.

8 Sep 2011 [or dated earlier] ZFITTER and Gfitter

end of agreement
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