DELPHI data preservation, re-use, and open access policy

The DELPHI collaboration,
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The DELPHI experiment conducted e+e- collisions at various energies and produced a unique and irreplaceable data set that has been of great interest to the international scientific community. The experiment ran for a decade between 1989 and 2000, yielding important physics results, especially on electroweak interactions and QCD. However, many results from DELPHI are increasingly difficult to reproduce, as the required detailed knowledge of the scientific community about the detector and the run conditions are vanishing. Therefore, the collaboration strongly discourages attempts to redo high-precision analyses. Despite this, the data still holds potential for further exploration and discovery. Therefore, the data should be preserved and made accessible to the public for various purposes, such as education and citizen science. This document outlines the data preservation, re-use, and open access policy for this valuable data set.

Potential users of the data are encouraged to get in contact with DELPHI scientists to understand the limitations and possibilities. They are also encouraged to register their activity with the DELPHI data preservation board. DELPHI aims to implement the FAIR[1] principle for its data[2], but its full implementation will be subject to available person power.

Detailed and up to date information about the status and contacts will be made available via the DELPHI web page at http://delphiwww.cern.ch.

1   DELPHI Data

The data released by the DELPHI experiment consists of data sets collected during the operation of the experiments between 1989 and 2000. Additionally, various simulated data sets that simulate a large number of physics processes are also being released.

The main format of the data is called SHORT DST, which contains physics information in a compressed format. Reading of this data is supported by various software packages, as described in the documentation. In addition, the original RAW data is also available. Its main purpose is to study individual events with the event server and the display. Currently, the data is available via the CERN EOS storage system, with a backup on CERN's tape archive system, CTA. At a later point in time, the data should also be accessible via the CERN Open Data Portal.

Publications based on the DELPHI data shall give credits to the collaboration and clearly identify the data which has been used, e.g. by quoting an identifier, such as a DOI when available.

Following the convention of CERN, all metadata and data are released under the terms of the CC0 waiver.

2   DELPHI Analysis Software

The DELPHI analysis software, which includes all software for event reconstruction, event simulation, physics analysis and event viewing, is also released under an open-source license and is available via

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[1]FAIR: Findability, Accessibility, Interoperability, and Reuse

[2]Guiding Principles for scientific data management and stewardship, currently available at: https://www.gofair.org/fair-principles

CERN GitLab and CVMFS.

The DELPHI software has been recently adapted to modern computing architectures, and most relevant functionality has been verified. However, it is important to note that for most software packages relevant experts have moved on for a long time, so no support for any specific purpose can be guaranteed.

The part of the software stack that is specific to the DELPHI experiment is released under the GPL license. Some parts of the software stack that are common with other LEP experiments have their own license conventions.

3 DELPHI Documentation

Various internal DELPHI notes and manuals, that are required for the understanding of data are also released under the terms of the the CCO waiver and are made available on the CERN document server [3], CDS.

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[3]Currently available at https://cds.cern.ch