The HEP-PAPER package*

Complete article preamble: fonts, math, title, references, floats, acronyms and bibliography

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Abstract

The HEP-PAPER package is the aggregate publication setup for the HEP package suite. It configures the page geometry, language, fonts, hyperlinks, title data, bibliography, acronyms, references, floats, text helpers, and math fonts by loading the corresponding modular packages with publication-oriented defaults.

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1 Introduction

For usual publications it is enough to load additionally to the `article` class without optional arguments only the HEP-PAPER package [1].

```
\documentclass{article}
\usepackage{hep-paper}
```

The most notable changes after loading the HEP-PAPER package are the changes of some LaTeX defaults. The paper and font sizes are set to A4 and 11 pt, respectively. Additionally, the paper geometry is adjusted using the GEOMETRY package [2]. Furthermore, text and math fonts are configured with HEP-FONT and HEP-MATH-FONT, text helpers with HEP-TEXT, bibliographies with HEP-BIBLIOGRAPHY, acronyms with HEP-ACRONYM, references and hyperlinks with HEP-REFERENCE, titles with HEP-TITLE, and floats with HEP-FLOAT.

1.1 Options

`paper` The `paper=`⟨*format*⟩ option loads the specified paper format. The possible ⟨*formats*⟩ are: `a0`, `a1`, `a2`, `a3`, `a4`, `a5`, `a6`, `b0`, `b1`, `b2`, `b3`, `b4`, `b5`, `b6`, `c0`, `c1`, `c2`, `c3`, `c4`, `c5`, `c6`, `ansia`, `ansib`, `ansic`, `ansid`, `ansie`, `letter`, `executive`, `legal`. The default is `a4`.

`font` The `font=`⟨*size*⟩ option loads the specified font size. The possible ⟨*sizes*⟩ are: `8pt`, `9pt`, `10pt`, `11pt`, `12pt`, `14pt`, `17pt`, `20pt`. The default is 11 pt. Font and paper size options of the document class, such as `12pt` or `letterpaper`, replace these defaults, while explicit `font` and `paper` options of this package take precedence.

`lang` The `lang=`⟨*name*⟩ option switches the document language. The default is `british`.

`sansserif` The `sansserif` option switches the document including math to sans serif font shape.

`oldstyle` The `oldstyle` option activates the use of oldstyle text- (123) in favour of lining- (123) figures in text mode.

`parskip` The `parskip` option changes how paragraphs are separated from each other using the PARSKIP package [3]. The LaTeX default is separation via indentation the `parskip` option switches to separation via vertical space.[1]

`symbols` The `symbols=`⟨*family*⟩ is passed to the HEP-MATH-FONT package [4] and sets the family of the symbol fonts. `symbols=false` deactivates loading any additional symbol fonts.

1.1.1 Deactivation

The HEP-PAPER package loads few bigger packages which have a large impact on the document. The deactivation options can prevent such and other adjustments.

`defaults` The `defaults` option prevents the adjustment of the page geometry and the font size set by the document class.

`title` The `title=false` option deactivates the title page adjustments. In the compatibility modes it switches back to the title macros of the journal class or style, see section 1.1.3.

`bibliography` The `bibliography=`⟨*key*⟩ option prevents the automatic loading of the HEP-BIBLIOGRAPHY package [5] if ⟨*key*⟩=`false`.

`glossaries` The `glossaries=false` option deactivates acronyms and the use of the HEP-ACRONYM package [6].

`references` The `references=false` option prevents the CLEVEREF package [7] from being loaded and deactivates further redefinitions of reference macros.

1.1.2 Compatibility

The compatibility options activate the compatibility mode for certain classes and packages used for publications in high energy physics. They are mostly suitable combinations of options described in the previous section. If HEP-PAPER is able to detect the presence of such a class or package, i.e. if it is loaded before the HEP-PAPER package, the compatibility mode is activated automatically. Classes are always loaded before, so the options are only needed for the JHEP and JCAP styles, which they load. An option is ignored with a warning if its class or style is not available.

`beamer` The `beamer` option activates the BEAMER [8] compatibility mode. Like the `amsart` and `pos` options it keeps HEP-ACRONYM from loading TITLESEC, which does not support the sectioning commands of BEAMER.

`jhep` The `jhep` option activates the JHEP [9] compatibility mode.

`jcap` The `jcap` option activates the JCAP [10] compatibility mode.

`revtex` The `revtex` option activates the REVTEX [11] compatibility mode.

`pos` The `pos` option activates the PoS compatibility mode. It implies `symbols=false`, because the PoS class already uses most of the 16 math families available in pdfLATEX. Like the `amsart` option it keeps HEP-ACRONYM from loading TITLESEC, which is incompatible with the sectioning code of these classes.

`springer` The `springer` option activates the compatibility mode the `svjour` class [12].

`amsart` The `amsart` option activates the compatibility mode for the `amsart` class.

`koma` The `koma` option activates the compatibility mode for the KOMA-SCRIPT classes `scrartcl`, `scrreprt`, and `scrbook` [13]. It keeps the font size and the type area of the class and, like the `amsart` option, keeps HEP-ACRONYM from loading TITLESEC, which is not recommended with these classes.

1.1.3 Switching journals

A document can be written with the `article` class and be switched to a journal by changing only the `\documentclass` line, or by adding the `jhep` or `jcap` option, which load the JHEP and JCAP styles. In all compatibility modes except `beamer` the title macros of section 2.1 keep their meaning. The HEP-JOURNAL package stores the title data and hands them to the macros of the journal when the title is made:

JHEP and JCAP The affiliation labels become letters in the order of first use, emails become `\emailAdd`, thanks become `\note`, the series becomes the `\subheader`, and the first arXiv number becomes the `\arxivnumber`. Preprint numbers are placed in the header.

REVTEX Every author is followed by the emails, thanks, and affiliations, which REVTEX merges if they are identical. Preprint and arXiv numbers become `\preprint`s.

Springer For the EPJ style the emails and thanks become `\thankstext`s and the affiliations an `\institute` with labels, all referred to by `\thanksref`. For the plain `svjour3` class every

[1] Although the `parskip` option is used for this document, it is recommended only for very few document types such as technical manuals or answers to referees.

author is listed in the `\institute` together with the affiliations and emails. The keywords are placed in the abstract.

amsart Every author is followed by an `\address` for each affiliation, the emails, and the thanks.

PoS Every author gets one `\author` with the affiliations and emails. The series becomes `\FullConference` and the title `\ShortTitle`, unless these are given, and the keywords are appended to the abstract.

KOMA-Script The series becomes the `\subject`, preprint and arXiv numbers are placed in the `\titlehead`, and the subtitle is passed on. The authors get the letters of their affiliations, unless there is only one affiliation, and their emails and thanks as footnotes. The affiliations are listed in `\publishers`, below the authors and the date. The abstract and the keywords follow the title, and an abstract later in the document is typeset where it stands.

The abstract can be placed according to the conventions of any of these journals: after `\maketitle` (ARTICLE, SVJOUR3), before `\maketitle` in the document (REVTEX, AMSART), or in the preamble, either as environment or in the command form `\abstract{`⟨*text*⟩`}` (JHEP, JCAP, PoS). An abstract that follows the title only after other material is placed in the title of the next run, if the journal expects the abstract before the title. The PoS class makes the title itself, at the beginning of the document, if the abstract is given in the preamble; otherwise the title is made by `\maketitle`. Title data without counterpart in the journal, such as editors or ORCID identifiers in most journals, are ignored with a warning, and the layout macros of the title are ignored. Journal specific macros such as `\collaboration` or `\journalname` can be used in addition. With `title=false` the title data have to be given with the macros of the journal.

1.1.4 Reactivation

The HEP-PAPER package deactivates unrecommended macros, which can be reactivated manually.

`manualplacement` The `manualplacement` option reactivates manual float placement.

`eqnarray` The `eqnarray` option reactivates the depreciated `eqnarray` environment.

2 Macros and environments

`twocolumn` `abstract*` If the global `twocolumn` option is present the page geometry is changed to cover almost the entire page. Additionally the `abstract*` environment is defined that generates a one column abstract and takes care of placing the title information.

2.1 Title page

`\series` The `\series{`⟨*series*⟩`}` macro is defined using the HEP-TITLE package [14].

`\title` The portable document format meta information is set according to the `\title{`⟨*text*⟩`}` and `\author{`⟨*text*⟩`}` information.

`\subtitle` The `\subtitle{`⟨*subtitle*⟩`}` macro is defined.

`\editor` The following lines add e.g. two authors with different affiliations

`\author` `\affiliation` `\email`

```
\author[1]{Author one \email{email one}}
\affiliation[1]{Affiliation one}
\author[2]{Author two \email{email two}}
```

```
\affiliation[1,2]{Affiliation two}
```

`\preprint` The `\preprint{`⟨*numer*⟩`}` macro places a pre-print number in the upper right corner of the title page.

`abstract` (*env.*) The `abstract` environment is adjusted to not start with an indentation.

`\titlefont` `\subtitlefont` `\authorfont` `\affiliationfont` `\preprintfont` Various title font macros are defined, allowing to change the appearance of the `\maketitle` output.

2.2 Text

`inlinelist` `enumdescript` The `inlinelist` and `enumdescript` environments are defined.

`\textsc` A bold versions **Small Caps** and a sans serif version of Small Caps is provided.

`\underline` `\overline` The `\underline` macro is redefined to allow line-breaks. The `\overline` macro is extended to also overline text outside of math environments.

`\useparskip` `\useparindent` If the `parskip` option is activated the `\useparindent` macro switches to the usual parindent mode, while the `\useparskip` macro switches to the parskip mode.

2.2.1 References and footnotes

`\cref` References are extended with the cleveref package [7], which allows to e.g. just type `\cref{`⟨*key*⟩`}` in order to write 'figure 1'. Furthermore, the cleveref package allows to reference multiple objects within one `\cref{`⟨*key1,key2*⟩`}`.

`\cite` Citations are adjusted to not start on a new line in order to avoid the repeated use of `~\cite{`⟨*key*⟩`}`.

`\ref` References are also adjusted to not start on a new line.

`\eqref` `\subref` `\footnote` Footnotes are adjusted to swallow white space before the footnote mark and at the beginning of the footnote text.

2.2.2 Acronyms

`\acronym` `\shortacronym` `\longacronym` The hep-acronym package [6] is loaded. The `\acronym`⟨`*`⟩`[`⟨*typeset abbreviation*⟩`] {`⟨*abbreviation*⟩`}`⟨`*`⟩`{`⟨*definition*⟩`}[`⟨*definition*⟩`]` macro generates the singular `\`⟨*abbreviation*⟩ and plural `\`⟨*abbreviation*⟩`s` macros. The first star prevents the addition of an 's' to the abbreviation plural. The second star restores the TeX default of swallowing subsequent white space. The long form is only shown at the first appearance of these macros, later appearances generate the abbreviation with a hyperlink to the long form. The long form is never used in math mode. Capitalization at the beginning of paragraphs and sentences is (mostly) ensured. The `\shortacronym` and `\longacronym` macros are drop-in replacements of the `\acronym` macro showing only the short or long form of their acronym.

2.3 Math

`\mathbf` `\text` `\mathsf` `\mathscr` `\mathbb` The hep-math [15] and hep-math-font [4] packages are loaded. Bold math, via `\mathbf` is improved, i.e. ($AbI\Gamma\delta\boldsymbol{AbI\Gamma\delta}$). Macros switching to `bfseries` such as `\section{`⟨*text*⟩`}` are ensured to also typeset math in bold. The `\text{`⟨*text*⟩`}` macro makes it possible to write text within math mode, i.e. (AbIΓδ**AbIΓδ**). The math sans serif alphabet is redefined to be italic sans serif if the main text is serif and italic serif if the main text is sans serif, i.e. ($\mathit{AbI\Gamma\delta}\boldsymbol{\mathit{AbI\Gamma\delta}}$). The `\mathcal` font i.e. ($\mathcal{ABCD}$) is accompanied by the `\mathscr` font i.e. ($\mathscr{ABCD}$). The `\mathbb`

`\mathfrak` font is adjusted depending on the `sansserif` option i.e. ($\mathbb{Ah1}$). Finally, the `\mathfrak` font is also available i.e. ($\mathfrak{Aa}\mathfrak{Bb12}$).

`\nicefrac` `\flatfrac` `\textfrac` The `\frac{`⟨*number*⟩`}{`⟨*number*⟩`}` macro is accompanied by `\nicefrac{`⟨*number*⟩`}{`⟨*number*⟩`}`, `\textfrac{`⟨*number*⟩`}{`⟨*number*⟩`}`, and `\flatfrac{`⟨*number*⟩`}{`⟨*number*⟩`}` leading to $\frac{1}{2}$, 1/2, 1/2, and 1/2. Diagonal matrix `\diag` and signum `\sgn` operators are defined.

`\diag` `\sgn` `\mathdef` The `\mathdef{`⟨*name*⟩`}[`⟨*arguments*⟩`]{`⟨*code*⟩`}` macro (re-)defines macros only within math mode without changing the text mode definition.

`\i` The imaginary unit i and the differential d are defined using this functionality.

`\d` `\numberwithin` `subequations` For longer paper it can be useful to re-number the equation in accordance with the section numbering `\numberwithin{equation}{section}`. In order to further reduce the size the of equation counter it can be useful to wrap `align` environments with multiple rows in a `subequations` environment.

`\unit` `\inv` The correct spacing for units, cf. equation (2.1), is provided by the macro `\unit[`⟨*value*⟩`] {`⟨*unit*⟩`}` which can also be used in text mode. The macro `\inv[`⟨*power*⟩`]{`⟨*text*⟩`}` allows to avoid math mode also for inverse units such as $5\,\mathrm{fb}^{-1}$ typeset via `\unit[5]{\inv{fb}}`.

Greek letters are adjusted to always be italic and upright in math and text mode, respectively, using the HEP-MATH-FONT [4] package. This allows differentiations like

$$\sigma = 5\,\mathrm{fb}\,, \qquad \text{at } 5\,\sigma \text{ C.L.}\,, \qquad \mu = 5\,\mathrm{cm}\,, \qquad l = 5\,\mu\mathrm{m}\,. \tag{2.1}$$

Additionally, Greek letters can also be directly typed using Unicode.

`\ev` `\pdv` `\comm` `\order` The HEP-MATH package [15] provides additional macros such as

$$\langle\phi\rangle\,, \qquad \frac{\partial^3 f}{\partial x \partial y^2}\,, \qquad [A,B]\,, \qquad \mathcal{O}(x^2)\,, \qquad x|_0^\infty\,, \qquad \det(M)\,. \tag{2.2}$$

`\cancel` `\slashed` The `\cancel{`⟨*characters*⟩`}` macro and the `\slashed {`⟨*character*⟩`}` macro allow to $\cancel{\text{cancel}}$ math and use the Dirac slash notation i.e. $\not{\partial}$, respectively.

`\overleftright` A better looking over left right arrow is defined i.e. $\overleftrightarrow{\partial}$.

2.4 Floats

`figure` (*env.*) `table` (*env.*) Automatic float placement is adjusted to place a single float at the top of pages and to reduce the number of float pages, using the HEP-FLOAT package [16]. The most useful float placement is usually achieved by placing the float *in front* of the paragraph it is referenced in first.

`panels` (*env.*) `\panel` The `panels` environment provides sub-floats and takes as mandatory argument either the number of sub-floats (default 2) or the width of the first sub-float as fraction of the `\linewidth`. Within the `\begin{panels}[`⟨*vertical alignment*⟩`]{`⟨*width*⟩`}` environment the `\panel` macro initiates a new sub-float. In the case that the width of the first sub-float has been given as an optional argument to the `panels` environment the `\panel{`⟨*width*⟩`}` macro takes the width of the next sub-float as mandatory argument.

`\graphic` `\graphics` The `\graphic[`⟨*width*⟩`]{`⟨*figure*⟩`}` macro is defined, which is a wrapper for the `\includegraphics{`⟨*figure*⟩`}` macro and takes the figure width as fraction of the `\linewidth` as optional argument (default 1). If the graphics are located in a sub-folder its path can be indicated by `\graphics{`⟨*subfolder*⟩`}`.

2.5 Bibliography

\bibliography
\printbibliography

The BIBLATEX package [17] is loaded for bibliography management. The user has to add the line `\bibliography{`⟨*my.bib*⟩`}` to the preamble of the document and `\printbibliography` at the end of the document. The bibliography is generated by BIBER [18]. BIBLATEX is extended by the HEP-BIBLIOGRAPHY package [5] to be able to cope with the `collaboration` and `reportNumber` fields provided by `inspirehep.net` and a bug in the volume number is fixed. Additionally, the PubMed IDs are recognized and `ctan.org`, `github.com`, `gitlab.com`, `bitbucket.org`, `launchpad.net`, `sourceforge.net`, and `hepforge.org` are valid `eprinttype`s. Errata can be included using the `related` feature.

erratum

```
\article{key1,
  ...,
  relatedtype="erratum",
  related="key2",
}
\article{key2,
  ...,
}
```

3 Conclusion

The HEP-PAPER package provides a matching selection of preloaded packages and additional macros enabling the user to focus on the content instead of the layout by reducing the amount of manual tasks. The majority of the loaded packages are fairly lightweight, the others can be deactivated with package options.

arxiv-collector

`arxiv.org` [19] requires the setup dependent `bbl` files instead of the original `bib` files, which causes trouble if the local LaTeX version differs from the one used by arXiv. The ARXIV-COLLECTOR python script [20] alleviates this problem by collecting all files necessary for publication on arXiv (including figures).

A Options

<*package>

Load the KVOPTIONS package [21] and define a `hep` namespace.

```
\RequirePackage{kvoptions}
\SetupKeyvalOptions{
  family=hep,
  prefix=hep@
}
```

`paper` Define a `paper=`⟨*size*⟩ option. Make A4 paper the default.

```
\DeclareStringOption[a4]{paper}
```

`font` Define a `font=`⟨*size*⟩ option. Make 11 pt the default font size.

```
\DeclareStringOption[11pt]{font}
```

`lang` Define the `lang` option, which takes the values provided by the BABEL package [22]. Make `british` the default language.

```
\DeclareStringOption[british]{lang}
```

`sansserif` Define the option pair `serif` and `sansserif` controling the font shape of the whole document.

```
\DeclareBoolOption[true]{serif}
\DeclareComplementaryOption{sansserif}{serif}
```

`lining` Define the `lining` option deactivating the use of text figures in text mode.

```
\DeclareBoolOption[true]{lining}
\DeclareComplementaryOption{oldstyle}{lining}
```

`parskip` Define the option pair `parindent` and `parskip` controlling the separation of paragraphs.

```
\DeclareBoolOption[true]{parindent}
\DeclareComplementaryOption{parskip}{parindent}
```

`symbols` Provide the `symbols` option allowing to switch the symbol font.

```
\DeclareStringOption[true]{symbols}
```

A.1 Deactivation

`defaults` Define the `defaults` option which deactivates the `paper` and `font` options and prevents the change of the class defaults by this package.

```
\DeclareBoolOption[false]{defaults}
```

`title` Provide the `title` option deactivating redefinitions of title macros.

```
\DeclareBoolOption[true]{title}
```

`physics` Provide the `physics` option for deactivating redefinition of physics macros.

```
\DeclareBoolOption[true]{physics}
```

`bibliography` Provide the `bibliography` option for passing a `style` string to the BIBLATEX package [17] or disabling the automatic loading of `biblatex`.

```
\DeclareStringOption[numeric-comp]{bibliography}
```

`glossaries` Provide the `glossaries` option able to turn of the use of the HEP-ACRONYM package [6].

```
\DeclareBoolOption[true]{glossaries}
```

`references` Provide the `references` option for preventing the CLEVEREF package from being loaded redefinitions of reference macros.

```
\DeclareBoolOption[true]{references}
```

A.2 Compatibility

`beamer` Provide the `beamer` option for BEAMER [8] compatibility mode.

```
\DeclareBoolOption[false]{beamer}
```

`revtex` Provide the `revtex` option for REVTEX [11] compatibility mode.

```
\DeclareBoolOption[false]{revtex}
```

`jhep` Provide the `jhep` option for JHEP [9] compatibility mode.

```
\DeclareBoolOption[false]{jhep}
```

`jcap` Provide the `jcap` option for JCAP [10] compatibility mode.

```
\DeclareBoolOption[false]{jcap}
```

`pos` Provide the `pos` option for PoS compatibility mode.

```
\DeclareBoolOption[false]{pos}
```

`springer` Provide the `springer` option for Springer compatibility mode.

```
\DeclareBoolOption[false]{springer}
```

`amsart` Provide the `amsart` option for AMS article compatibility mode.

```
\DeclareBoolOption[false]{amsart}
```

`koma` Provide the `koma` option for KOMA-SCRIPT compatibility mode.

```
\DeclareBoolOption[false]{koma}
```

A.3 Reactivation

`eqnarray` Provide the `eqnarray` option for reactivating the `eqnarray` environment.

```
\DeclareBoolOption[true]{eqnarray}
```

`manualplacement` Provide the `manualplacement` option for reactivating the manual placement of floats.

```
\DeclareBoolOption[false]{manualplacement}
```

A.4 Class options

`\hep@if@class@option` Read the font and paper size from the class options stored in `\@classoptionslist`. This happens before the package options are processed, so that the class options only change the defaults, while explicit `font` and `paper` options of this package take precedence.

```
\newcommand*{\hep@if@class@option}[1]{%
  \ifx\@classoptionslist\relax
    \in@false
  \else
    \@expandtwoargs\in@{,#1,}{,\@classoptionslist,}%
  \fi
  \ifin@
    \expandafter\@firstoftwo
  \else
    \expandafter\@secondoftwo
  \fi
}
\hep@if@class@option{a5paper}{\setkeys{hep}{paper=a5}}{}
\hep@if@class@option{b5paper}{\setkeys{hep}{paper=b5}}{}
\hep@if@class@option{letterpaper}{\setkeys{hep}{paper=letter}}{}
\hep@if@class@option{legalpaper}{\setkeys{hep}{paper=legal}}{}
\hep@if@class@option{executivepaper}{%
  \setkeys{hep}{paper=executive}%
}{}
```

`\hep@class@size` Take every class option of the form ⟨*number*⟩`pt`, such as `10pt` or the `14pt` of the EXTSIZES classes, as default `font` size, since the HEP-FONT package accepts any positive point size.

```
\ExplSyntaxOn
\cs_new_protected:Npn \hep@class@size #1 {
  \regex_match:nnT { \A [0-9]+ (\.[0-9]+)? pt \Z } {#1}
    { \setkeys{hep}{font=#1} }
}
\ExplSyntaxOff
\ifx\@classoptionslist\relax\else
  \@for\hep@option:=\@classoptionslist\do{%
    \expandafter\hep@class@size\expandafter{\hep@option}%
  }
\fi
```

A.5 Process options

```
\ProcessKeyvalOptions*
```

`\hep@class` Store the name of the document class, the first class file in `\@filelist`. Files loaded before the class, for example with `\RequirePackage`, are skipped.

```
\def\hep@get@class#1.cls#2\@nil{#1}
\let\hep@class\@empty
\@for\hep@file:=\@filelist\do{%
  \ifx\hep@class\@empty
    \@expandtwoargs\in@{.cls}{\hep@file}%
    \ifin@
      \edef\hep@class{\expandafter\hep@get@class\hep@file\@nil}%
    \fi
  \fi
}
```

A.6 Set compatibility

`\hep@compatibility` The classes are detected below, so the compatibility options for classes are not needed. Ignore the option `#1` with a warning if none of the classes `#2` is loaded, since the compatibility mode would fail with any other class.

```
\newcommand*\hep@compatibility[2]{%
  \csname ifhep@#1\endcsname
    \@tempswafalse
    \@for\hep@tempa:=#2\do{\@ifclassloaded{\hep@tempa}{\@tempswatrue}{}}%
    \if@tempswa\else
      \PackageWarningNoLine{hep-paper}{%
        Option `#1' ignored, since none of the classes\MessageBreak
        #2 is loaded.\MessageBreak
        The compatibility mode is selected automatically\MessageBreak
        if one of them is loaded%
      }%
      \setkeys{hep}{#1=false}%
    \fi
  \fi
}
\hep@compatibility{amsart}{amsart}
\hep@compatibility{koma}{scrartcl,scrreprt,scrbook}
\hep@compatibility{springer}{svjour,svjour2,svjour3}
\hep@compatibility{pos}{PoS}
\hep@compatibility{beamer}{beamer}
\hep@compatibility{revtex}{revtex4,revtex4-1,revtex4-2}
```

Set the `amsart` compatibility options using the xpatch package [23].

```
\@ifclassloaded{amsart}{\setkeys{hep}{amsart}}{}
\ifhep@amsart
  \setkeys{hep}{defaults}
  \PassOptionsToPackage{titlesec=false}{hep-acronym}
```

```
  \RequirePackage{xpatch}
  \xpretocmd{\@adminfootnotes}{%
    \ifdefined\BHFN@OldMakefntext\let\@makefntext\BHFN@OldMakefntext\fi
  }{}{}
\fi
```

Set the `koma` compatibility options. The type area of the class is kept, since GEOMETRY is only loaded without the `defaults` option.

```
\@ifclassloaded{scrartcl}{\setkeys{hep}{koma}}{}
\@ifclassloaded{scrreprt}{\setkeys{hep}{koma}}{}
\@ifclassloaded{scrbook}{\setkeys{hep}{koma}}{}
\ifhep@koma
  \setkeys{hep}{defaults}
  \PassOptionsToPackage{titlesec=false}{hep-acronym}
\fi
```

Set the `springer` compatibility options.

```
\@ifclassloaded{svjour}{\setkeys{hep}{springer}}{}
\@ifclassloaded{svjour2}{\setkeys{hep}{springer}}{}
\@ifclassloaded{svjour3}{\setkeys{hep}{springer}}{}
\ifhep@springer
  \setkeys{hep}{defaults}
  \let\cl@chapter\undefined
  \AtBeginDocument{%
    \@ifpackageloaded{hyperref}{%
      \pdfstringdefDisableCommands{\let\thanksref\@gobble}%
    }{}%
  }
\fi
```

Set the `pos` compatibility options.

```
\@ifclassloaded{PoS}{\setkeys{hep}{pos}}{}
\ifhep@pos
  \setkeys{hep}{%
    defaults, references=false, font=default, symbols=false%
  }
  \PassOptionsToPackage{titlesec=false}{hep-acronym}
  \DeclareRobustCommand\boldmath{\@nomath\boldmath\mathversion{bold}}
  \PassOptionsToPackage{hidelinks}{hyperref}
  \RequirePackage{hyperref}
\fi
```

Set the `beamer` compatibility options.

```
\@ifclassloaded{beamer}{\setkeys{hep}{beamer}}{}
\ifhep@beamer
  \setkeys{hep}{%
    defaults, title=false, references=false, sansserif, font=default%
  }
  \PassOptionsToPackage{titlesec=false}{hep-acronym}
```

```
  \@ifpackageloaded{beamerbasefont}{\usefonttheme{professionalfonts}}{}
  \setbeamertemplate{navigation symbols}{}
\fi
```

Set the `revtex` compatibility options.

```
\@ifclassloaded{revtex4}{\setkeys{hep}{revtex}}{}
\@ifclassloaded{revtex4-1}{\setkeys{hep}{revtex}}{}
\@ifclassloaded{revtex4-2}{\setkeys{hep}{revtex}}{}
\ifhep@revtex
  \setkeys{hep}{
    defaults,
    font=default,
    bibliography=false,
    lang=american,
  }
  \RequirePackage{hep-revtex}
\fi
```

Define the SISSA conditional. The `jhep` and `jcap` options load the JHEP and JCAP styles if they have not been loaded before. These styles are distributed by the journals, so ignore the options with a warning if the styles are not installed.

```
\newcommand*\hep@sissa@style[2]{%
  \csname ifhep@#1\endcsname
    \IfFileExists{#2.sty}{\RequirePackage{#2}}{%
      \PackageWarningNoLine{hep-paper}{%
        Option `#1' ignored, since #2.sty is not installed%
      }%
      \setkeys{hep}{#1=false}%
    }%
  \fi
}
\hep@sissa@style{jhep}{jheppub}
\hep@sissa@style{jcap}{jcappub}
\@ifpackageloaded{jheppub}{\setkeys{hep}{jhep}}{}
\@ifpackageloaded{jcappub}{\setkeys{hep}{jcap}}{}
\newif\ifhep@sissa
\ifhep@jhep\hep@sissatrue
\else
  \ifhep@jcap\hep@sissatrue
  \else\hep@sissafalse
  \fi
\fi
```

Set the SISSA compatibility options.

```
\ifhep@sissa
  \setkeys{hep}{defaults, bibliography=false}
  \RequirePackage{hep-sissa}
\fi
\ifhep@jhep
```

```
    \PassOptionsToPackage{\hep@paper paper}{geometry}
    \RequirePackage{geometry}
    \geometry{
      offset=0in,
      top=.1\paperheight,
      textheight=.756\paperheight,
      textwidth=.72\paperwidth,
    }
\fi
```

B Math

Load the HEP-MATH package [15].

```
\ifhep@physics\RequirePackage{hep-math}\fi
```

C Font

Load the HEP-FONT package [24]. The `defaults` option, also set by the compatibility modes, keeps the font size of the class.

```
\ifhep@defaults\setkeys{hep}{font=default}\fi
\PassOptionsToPackage{
  size=\hep@font,
  sans=\ifhep@serif false\else true\fi,
  lining=\ifhep@lining true\else false\fi
}{hep-font}
\RequirePackage{hep-font}
```

C.1 Math fonts

Load the HEP-MATH-FONT package [4].

```
\PassOptionsToPackage{symbols=\hep@symbols}{hep-math-font}
\RequirePackage{hep-math-font}
```

D Geometry

Load the GEOMETRY package [2] and adjust the text width and height. This step must happen after readjusting the font size in section C.

```
\ifhep@defaults\else
  \RequirePackage{geometry}
  \geometry{\hep@paper paper, includeheadfoot}
  \if@twocolumn
    \geometry{hscale=.85, vscale=.925, vmarginratio=1:1}
    \geometry{headsep=2ex, footskip=6ex}
    \setlength{\columnsep}{1.1em}
  \else
    \geometry{hscale=.75, vscale=.8, vmarginratio=3:4}
```

```
  \fi
\fi
```

\useparskip
\useparindent

Load the PARSKIP package [3] if requested and provide two commands switching between the two paragraph modes.

```
\ifhep@parindent\else
\RequirePackage{parskip}
\newcommand*{\useparskip}{%
  \setlength{\parskip}{.5\baselineskip plus 2pt}%
  \setlength{\parindent}{0pt}%
}
\newcommand*{\useparindent}{%
  \setlength{\parskip}{0pt}%
  \setlength{\parindent}{15pt}%
  \if@twocolumn\setlength\parindent{1em}%
  \else\setlength\parindent{1.5em}%
  \fi
}
\fi
```

E Text

Load the HEP-TEXT package [25].

```
\PassOptionsToPackage{lang=\hep@lang}{hep-text}
\RequirePackage{hep-text}
```

F Floats

Adjust the LaTeX float placement defaults using the HEP-FLOAT package [16].

```
\ifhep@manualplacement
  \PassOptionsToPackage{local}{hep-float}
\else
  \PassOptionsToPackage{global}{hep-float}
\fi
\RequirePackage{hep-float}
```

\ifhep@journal

Define a new journal conditional.

```
\newif\ifhep@journal
\ifhep@sissa\hep@journaltrue
\else\ifhep@revtex\hep@journaltrue
  \else\ifhep@pos\hep@journaltrue
    \else\ifhep@springer\hep@journaltrue
      \else\hep@journalfalse
      \fi
    \fi
  \fi
\fi
```

Prevent the CAPTION package [26] from complaining about the journal classes and packages.

```
\ifhep@journal
  \setlength\abovecaptionskip{\f@size\p@}
  \setlength\belowcaptionskip{0\p@}
  \long\def\@makecaption#1#2{%
    \vskip\abovecaptionskip
    \sbox\@tempboxa{#1: #2}%
    \ifdim \wd\@tempboxa >\hsize
      #1: #2\par
    \else
      \global \@minipagefalse
      \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
    \fi
    \vskip\belowcaptionskip%
  }
\fi
```

G Title page

`\hep@backend` Adjust the title page using the HEP-TITLE package [14]. In the compatibility modes, except for BEAMER, load instead the HEP-JOURNAL package, which hands the title data to the journal class.

```
\ifhep@title
  \ifhep@revtex\def\hep@backend{revtex}\else
  \ifhep@jhep\def\hep@backend{jhep}\else
  \ifhep@jcap\def\hep@backend{jcap}\else
  \ifhep@springer\def\hep@backend{springer}\else
  \ifhep@amsart\def\hep@backend{amsart}\else
  \ifhep@pos\def\hep@backend{pos}\else
  \ifhep@koma\def\hep@backend{koma}\else
  \let\hep@backend\@empty
  \fi\fi\fi\fi\fi\fi\fi
  \ifx\hep@backend\@empty
    \RequirePackage{hep-title}
  \else
    \RequirePackage[\hep@backend]{hep-journal}
  \fi
\fi
```

`hep@journal@abstract` HEP-JOURNAL writes an abstract that follows the title to the auxiliary file. Ignore it if the document is switched to a mode without HEP-JOURNAL.

```
\providecommand*\hep@journal@abstract[1]{}
```

H Bibliography

Check if bibliography management is requested using the PDFTEXCMDS package [27]. And load the HEP-BIBLIOGRAPHY package [5]

```
\RequirePackage{pdftexcmds}
\ifnum\pdf@strcmp{\hep@bibliography}{false}=0\else
  \PassOptionsToPackage{style=\hep@bibliography}{hep-bibliography}
  \RequirePackage{hep-bibliography}
\fi
```

I Hyperlinks, Footnotes and References

Load the HEP-REFERENCE package [28].

```
\ifhep@references
\RequirePackage{hep-reference}
```

End of `references` conditional

```
\fi
```

J Acronyms

Define acronyms if not deactivated. Acronyms are implemented in the HEP-ACRONYM package [6] and must be loaded after the HYPERREF package in section I. Set the abbreviation style.

```
\ifhep@glossaries\RequirePackage{hep-acronym}\fi
```

</package>

K SISSA compatibility

<*sissa>

The title data are handed to the JHEP and JCAP styles by the HEP-JOURNAL package.

`\tableofcontents` `\listoffigures` `\listoftables`

Disable the `\tableofcontents`, `\listoffigures`, `\listoftables` macros since the `\maketitle` macro takes care of the journal style.

```
\let\hep@make@title\maketitle
\def\maketitle{\hep@make@title\renewcommand*{\tableofcontents}{}}
\renewcommand*{\listoffigures}{}
\renewcommand*{\listoftables}{}
```

Ensure that hyperlinks are colored correctly.

```
\AtEndPreamble{
  \hypersetup{
    colorlinks=true,
    linktocpage=true,
    urlcolor=blue,
    anchorcolor=blue,
    citecolor=blue,
    filecolor=blue,
    linkcolor=blue,
```

```
    menucolor=blue
  }
}
\AtEndPreamble{\@ifpackageloaded{cleveref}{\@cref@nameinlinkfalse}{}}
\AtEndPreamble{\@ifpackageloaded{glossaries}{\glsdisablehyper}{}}
\AtEndPreamble{\@ifpackageloaded{foreign}{
  \renewcommand*{\foreignabbrfont}{}
}{}}
```

Adjust the lining style in the bibliography.

```
\@ifpackageloaded{nfssext-cfr}{\renewcommand{\bibnumfmt}[1]{[\textt{#1}]}}{}
```

</sissa>

L Revtex

<*revtex>

Prevent adjustment of paper size.

```
\PassOptionsToPackage{size=default}{hep-font}
```

Load the `hyperref` package [29] in order to avoid compilation errors.

```
\RequirePackage{hyperref}
```

Allow definition of meta data in the preamble.

```
\frontmatter@init
\let\frontmatter@init\@empty
```

Prevent the abstract to move to the second page in preprint mode.

```
\RequirePackage{etoolbox}
\patchcmd{\frontmatter@abstract@produce}{
  \vskip200\p@\@plus1fil
  \penalty-200\relax
}{
  \vskip225\p@\@plus1fil
}{}{}
```

Ensure that the hyperlinks are colored correctly using the softwarexcolor package [30].

```
\RequirePackage{xcolor}
\definecolor{linkcolor}{RGB}{46,48,146}
\AtEndPreamble{
\@ifpackageloaded{hyperref}{
\hypersetup{
  colorlinks=true,
  linkcolor=linkcolor,
  citecolor=linkcolor,
  urlcolor=linkcolor,
  linktocpage=true
```

```
}}{}}
\AtEndPreamble{\@ifpackageloaded{cleveref}{%
  \@cref@nameinlinkfalse%
  \crefalias{BackrefHyperFootnoteCounter}{footnote}%
}{}}
\AtEndPreamble{\@ifpackageloaded{glossaries}{\glsdisablehyper}{}}
```

Without the HEP-JOURNAL package set the PDF title when the title is made. The default of a missing title is a warning, which must not be issued in a PDF string, where it loops if the SILENCE package is loaded.

```
\ifhep@title\else
  \pdfstringdefDisableCommands{\let\class@warn\@gobble}
  \AddToHook{cmd/maketitle/before}{\hypersetup{pdftitle={\@title}}}
\fi
```

Ensure correct formatting of float captions using the RAGGED2E package [31].

```
\AtBeginDocument{\@ifpackageloaded{caption}{
  \RequirePackage{ragged2e}
  \DeclareCaptionFormat{revtex}{#1#2\justifying{#3}}
  \captionsetup{font=small, format=revtex}
  \captionsetup[sub]{font=small, format=plain}
}{}}
```

Fixing the names of figures and tables.

```
\AfterEndPreamble{
  \renewcommand{\figurename}{FIG.}
  \renewcommand{\tablename}{TABLE}
}
```

</revtex>

M Journal title data

<*journal>

The HEP-JOURNAL package is loaded by HEP-PAPER in the compatibility modes instead of HEP-TITLE. It provides the user interface of HEP-TITLE, stores the title data instead of typesetting them, and hands them to the macros of the journal class or style when the title is made. The option names the journal: `jhep`, `jcap`, `revtex`, `springer`, `amsart`, `pos`, or `koma`. Load the ENVIRON package [32], define the messages and warn once for every macro without counterpart in the journal.

```
\RequirePackage{environ}
\ExplSyntaxOn
\str_new:N \g__hep_jr_backend_str
\DeclareOption*{\str_gset:Ne \g__hep_jr_backend_str {\CurrentOption}}
\ProcessOptions\relax
\msg_new:nnn { hep-journal } { unsupported }
  { \iow_char:N\\#1~is~not~supported~by~the~#2~mode~and~ignored. }
\msg_new:nnn { hep-journal } { no-author }
```

```
  { \iow_char:N\\#1~without~preceding~\iow_char:N\\author~ignored. }
\msg_new:nnn { hep-journal } { label }
  { Affiliation~label~'#1'~is~not~defined. }
\msg_new:nnn { hep-journal } { unused }
  { Affiliation~'#1'~is~not~used~by~any~author. }
\msg_new:nnn { hep-journal } { late-abstract }
  {
    The~abstract~comes~after~the~title~and~is~placed~there~in~the~
    next~run.~Place~it~directly~after~\iow_char:N\\maketitle~to~
    avoid~the~second~run.
  }
\msg_new:nnn { hep-journal } { no-title }
  { The~title~has~not~been~made,~\iow_char:N\\maketitle~is~missing. }
\clist_new:N \g__hep_jr_warned_clist
\cs_new_protected:Npn \__hep_jr_unsupported:n #1
  {
    \clist_if_in:NnF \g__hep_jr_warned_clist {#1}
      {
        \clist_gput_right:Nn \g__hep_jr_warned_clist {#1}
        \msg_warning:nnnV { hep-journal } { unsupported } {#1}
          \g__hep_jr_backend_str
      }
  }
\cs_generate_variant:Nn \msg_warning:nnnn { nnnV }
```

M.1 Storage

The title data are kept in global variables. Every author ⟨*n*⟩ has a name, a list of affiliation labels, and lists of email addresses, ORCID identifiers and thanks. Affiliations without label get the labels `hep-affiliation-`⟨*n*⟩ and belong to the authors without label since the previous affiliation, as in AUTHBLK.

```
\tl_new:N \g__hep_jr_title_tl
\tl_new:N \g__hep_jr_short_title_tl
\tl_new:N \g__hep_jr_subtitle_tl
\tl_new:N \g__hep_jr_series_tl
\tl_new:N \g__hep_jr_date_tl
\bool_new:N \g__hep_jr_date_bool
\tl_new:N \g__hep_jr_keywords_tl
\seq_new:N \g__hep_jr_preprint_seq
\seq_new:N \g__hep_jr_arxiv_seq
\seq_new:N \g__hep_jr_reprint_seq
\seq_new:N \g__hep_jr_doi_seq
\seq_new:N \g__hep_jr_editor_seq
\int_new:N \g__hep_jr_authors_int
\int_new:N \g__hep_jr_current_int
\prop_new:N \g__hep_jr_affil_prop
\seq_new:N \g__hep_jr_affil_seq
\seq_new:N \g__hep_jr_pending_seq
\bool_new:N \g__hep_jr_after_affil_bool
\int_new:N \g__hep_jr_affil_int
```

```
\tl_new:N \g__hep_jr_abstract_tl
\bool_new:N \g__hep_jr_abstract_bool
\tl_new:N \g__hep_jr_aux_abstract_tl
\bool_new:N \g__hep_jr_aux_abstract_bool
\bool_new:N \g__hep_jr_made_bool
\bool_new:N \g__hep_jr_pending_bool
\seq_new:N \g__hep_jr_code_seq
\seq_new:N \g__hep_jr_trace_seq
\tl_new:N \l__hep_jr_name_tl
\tl_new:N \l__hep_jr_before_tl
\tl_new:N \l__hep_jr_after_tl
\tl_new:N \l__hep_jr_opt_tl
\tl_new:N \l__hep_jr_arg_tl
\tl_new:N \l__hep_jr_arg_ii_tl
\tl_new:N \l__hep_jr_label_tl
\tl_new:N \l__hep_jr_tmp_tl
\seq_new:N \l__hep_jr_tmp_seq
\clist_new:N \l__hep_jr_tmp_clist
\prop_new:N \l__hep_jr_letter_prop
\int_new:N \l__hep_jr_tmp_int
\quark_new:N \q__hep_jr_mark
\quark_new:N \q__hep_jr_stop
```

Save copies of the class macros that are replaced by the user interface, using `\NewCommandCopy` so that commands with optional arguments keep working. They are restored before the data are handed to the class.

```
\clist_const:Nn \c__hep_jr_class_clist
  {
    title, author, affiliation, email, thanks, keywords, date, subtitle,
    preprint, abstract, endabstract, maketitle
  }
\clist_map_inline:Nn \c__hep_jr_class_clist
  {
    \cs_if_exist:cT {#1}
      {
        \exp_args:Ncc \NewCommandCopy
          { __hep_jr_class_ #1 : } {#1}
      }
  }
\cs_new_protected:Npn \__hep_jr_restore:
  {
    \clist_map_inline:Nn \c__hep_jr_class_clist
      {
        \cs_if_exist:cT { __hep_jr_class_ ##1 : }
          { \cs_gset_eq:cc {##1} { __hep_jr_class_ ##1 : } }
      }
    \cs_if_exist:NF \__hep_jr_class_endabstract:
      { \cs_undefine:N \endabstract }
  }
```

M.2 Authors

Create a new author with labels {⟨*labels*⟩} and name {⟨*name*⟩}. The contact information inside the name is moved to the lists of the author, while `\email`, `\orcid`, `\orcmail` and `\thanks` after `\author` are added to the last author.

```
\cs_new:Npn \__hep_jr_field:nn #1#2
  { g__hep_jr_author_ #1 _ #2 }
\cs_new_protected:Npn \__hep_jr_new_author:nn #1#2
  {
    \int_gincr:N \g__hep_jr_authors_int
    \int_gset_eq:NN \g__hep_jr_current_int \g__hep_jr_authors_int
    \tl_set:Ne \l__hep_jr_tmp_tl { \int_use:N \g__hep_jr_current_int }
    \tl_new:c { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { name_tl } }
    \clist_new:c { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { labels_clist } }
    \seq_new:c { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { email_seq } }
    \seq_new:c { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { orcid_seq } }
    \seq_new:c { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { thanks_seq } }
    \bool_if:NT \g__hep_jr_after_affil_bool
      {
        \seq_gclear:N \g__hep_jr_pending_seq
        \bool_gset_false:N \g__hep_jr_after_affil_bool
      }
    \tl_if_blank:nTF {#1}
      { \seq_gput_right:NV \g__hep_jr_pending_seq \l__hep_jr_tmp_tl }
      {
        \clist_gset:cn
          { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { labels_clist } } {#1}
      }
    \tl_set:Nn \l__hep_jr_name_tl {#2}
    \__hep_jr_extract:NnN \email { 1 } \__hep_jr_email:nnn
    \__hep_jr_extract:NnN \orcid { 1 } \__hep_jr_orcid:nnn
    \__hep_jr_extract:NnN \orcmail { 2 } \__hep_jr_orcmail:nnn
    \__hep_jr_extract:NnN \thanks { 1 } \__hep_jr_thanks:nnn
    \tl_gset_eq:cN
      { \__hep_jr_field:Vn \l__hep_jr_tmp_tl { name_tl } }
      \l__hep_jr_name_tl
  }
\cs_generate_variant:Nn \__hep_jr_field:nn { V , e }
\cs_new_protected:Npn \__hep_jr_add:nn #1#2
  {
    \int_compare:nNnTF \g__hep_jr_current_int > 0
      {
        \seq_gput_right:cn
          { \__hep_jr_field:en { \int_use:N \g__hep_jr_current_int } {#1} }
          {#2}
      }
      {
        \int_compare:nNnT \g__hep_jr_current_int = 0
          { \msg_warning:nnn { hep-journal } { no-author } {#1} }
      }
```

```
  }
\cs_new_protected:Npn \__hep_jr_email:nnn #1#2#3
  { \__hep_jr_add:nn { email_seq } {#2} }
\cs_new_protected:Npn \__hep_jr_orcid:nnn #1#2#3
  { \__hep_jr_add:nn { orcid_seq } {#2} }
\cs_new_protected:Npn \__hep_jr_orcmail:nnn #1#2#3
  {
    \__hep_jr_add:nn { email_seq } {#3}
    \__hep_jr_add:nn { orcid_seq } {#2}
  }
\cs_new_protected:Npn \__hep_jr_thanks:nnn #1#2#3
  { \__hep_jr_add:nn { thanks_seq } {#2} }
```

Remove the top level occurrences of the command `#1` with an optional and `#2` mandatory arguments from the name and pass the arguments to `#3`. The name is split at the command with a delimited argument, and the arguments are read with `\tl_head:N` and `\tl_tail:N`. The quark `\q__hep_jr_mark` protects the rest of the name from losing its braces.

```
\cs_new_protected:Npn \__hep_jr_extract:NnN #1#2#3
  {
    \tl_if_in:NnT \l__hep_jr_name_tl {#1}
      {
        \cs_set_protected:Npn \__hep_jr_split:w ##1 #1 ##2 \q__hep_jr_stop
          {
            \tl_set:Nn \l__hep_jr_before_tl {##1}
            \tl_set:Nn \l__hep_jr_after_tl {##2}
          }
        \exp_after:wN \__hep_jr_split:w \l__hep_jr_name_tl
          \q__hep_jr_mark \q__hep_jr_stop
        \tl_clear:N \l__hep_jr_opt_tl
        \tl_trim_spaces:N \l__hep_jr_after_tl
        \exp_args:NV \tl_if_head_eq_charcode:nNT \l__hep_jr_after_tl [
          {
            \exp_after:wN \__hep_jr_opt:w \l__hep_jr_after_tl
              \q__hep_jr_stop
          }
        \__hep_jr_arg:N \l__hep_jr_arg_tl
        \tl_clear:N \l__hep_jr_arg_ii_tl
        \int_compare:nNnT {#2} > 1
          { \__hep_jr_arg:N \l__hep_jr_arg_ii_tl }
        \tl_remove_all:Nn \l__hep_jr_after_tl { \q__hep_jr_mark }
        \tl_trim_spaces:N \l__hep_jr_before_tl
        \tl_trim_spaces:N \l__hep_jr_after_tl
        \tl_set:Ne \l__hep_jr_name_tl
          {
            \exp_not:V \l__hep_jr_before_tl
            \tl_if_empty:NF \l__hep_jr_after_tl
              { \c_space_tl \exp_not:V \l__hep_jr_after_tl }
          }
        \use:e
          {
```

```
            \exp_not:N #3
              { \exp_not:V \l__hep_jr_opt_tl }
              { \exp_not:V \l__hep_jr_arg_tl }
              { \exp_not:V \l__hep_jr_arg_ii_tl }
          }
        \__hep_jr_extract:NnN #1 {#2} #3
      }
  }
\cs_new_protected:Npn \__hep_jr_opt:w [ #1 ] #2 \q__hep_jr_stop
  {
    \tl_set:Nn \l__hep_jr_opt_tl {#1}
    \tl_set:Nn \l__hep_jr_after_tl {#2}
  }
\cs_new_protected:Npn \__hep_jr_arg:N #1
  {
    \tl_set:Ne #1 { \tl_head:N \l__hep_jr_after_tl }
    \tl_if_eq:NNTF #1 \q__hep_jr_mark
      { \tl_clear:N #1 }
      {
        \tl_set:Ne \l__hep_jr_after_tl
          { \tl_tail:N \l__hep_jr_after_tl }
      }
  }
```

M.3 User interface

The commands of HEP-TITLE only store their arguments. The layout commands of HEP-TITLE are ignored, unless the class defines a command with the same name.

```
\RenewDocumentCommand \title { o m }
  {
    \tl_gset:Nn \g__hep_jr_title_tl {#2}
    \IfValueTF {#1}
      { \tl_gset:Nn \g__hep_jr_short_title_tl {#1} }
      { \tl_gclear:N \g__hep_jr_short_title_tl }
  }
\DeclareDocumentCommand \subtitle { m }
  { \tl_gset:Nn \g__hep_jr_subtitle_tl {#1} }
\DeclareDocumentCommand \series { m }
  { \tl_gset:Nn \g__hep_jr_series_tl {#1} }
\RenewDocumentCommand \date { m }
  {
    \tl_gset:Nn \g__hep_jr_date_tl {#1}
    \bool_gset_true:N \g__hep_jr_date_bool
  }
\DeclareDocumentCommand \keywords { m }
  { \tl_gset:Nn \g__hep_jr_keywords_tl {#1} }
\DeclareDocumentCommand \preprint { m }
  { \seq_gput_right:Nn \g__hep_jr_preprint_seq {#1} }
\DeclareDocumentCommand \arxiv { m }
  { \seq_gput_right:Nn \g__hep_jr_arxiv_seq {#1} }
```

```
\DeclareDocumentCommand \reprint { m }
  { \seq_gput_right:Nn \g__hep_jr_reprint_seq {#1} }
\DeclareDocumentCommand \doi { m }
  { \seq_gput_right:Nn \g__hep_jr_doi_seq {#1} }
\DeclareDocumentCommand \author { O{} m }
  { \__hep_jr_new_author:nn {#1} {#2} }
\cs_new_protected:Npn \__hep_jr_person:nn #1#2
  {
    \seq_gput_right:Nn \g__hep_jr_editor_seq {#1}
    \int_gset:Nn \g__hep_jr_current_int { -1 }
  }
\DeclareDocumentCommand \editor { O{} m }
  { \__hep_jr_person:nn { \editor } {#2} }
\DeclareDocumentCommand \endorser { O{} m }
  { \__hep_jr_person:nn { \endorser } {#2} }
\DeclareDocumentCommand \affiliation { o m }
  {
    \tl_if_novalue:nTF {#1}
      {
        \int_gincr:N \g__hep_jr_affil_int
        \tl_set:Ne \l__hep_jr_label_tl
          { hep-affiliation- \int_use:N \g__hep_jr_affil_int }
        \seq_map_inline:Nn \g__hep_jr_pending_seq
          {
            \clist_gput_right:cV
              { \__hep_jr_field:nn {##1} { labels_clist } }
              \l__hep_jr_label_tl
          }
        \bool_gset_true:N \g__hep_jr_after_affil_bool
      }
      { \tl_set:Ne \l__hep_jr_label_tl { \tl_trim_spaces:n {#1} } }
    \prop_gput:NVn \g__hep_jr_affil_prop \l__hep_jr_label_tl {#2}
    \seq_gput_right:NV \g__hep_jr_affil_seq \l__hep_jr_label_tl
  }
\cs_new_protected:Npn \__hep_jr_contact:nnn #1#2#3
  {
    \bool_if:NTF \g__hep_jr_made_bool {#3} { #1 { } {#2} { } }
  }
\DeclareDocumentCommand \email { o m }
  {
    \__hep_jr_contact:nnn \__hep_jr_email:nnn {#2}
      { \hep@email {#2} }
  }
\DeclareDocumentCommand \orcid { m }
  {
    \__hep_jr_contact:nnn \__hep_jr_orcid:nnn {#1}
      { \online { https://orcid.org/#1 } {#1} }
  }
\DeclareDocumentCommand \orcmail { m m }
  { \email {#2} \orcid {#1} }
```

```
\DeclareDocumentCommand \thanks { o m }
  {
    \bool_if:NTF \g__hep_jr_made_bool
      { \__hep_jr_class_thanks: {#2} }
      { \__hep_jr_thanks:nnn { } {#2} { } }
  }
\clist_map_inline:nn
  {
    seriesfont, titlefont, subtitlefont, authorfont, authortitlefont,
    affiliationfont, editorfont, endorserfont, editortitlefont,
    endorsertitlefont, datefont, preprintfont, reprintfont, preseries,
    postseries, presubtitle, postsubtitle, preauthortitle,
    postauthortitle, preeditor, posteditor, preendorser, postendorser,
    preeditortitle, posteditortitle, preendorsertitle, postendorsertitle
  }
  { \cs_if_exist:cF {#1} { \cs_new_protected:cpn {#1} ##1 { } } }
\clist_map_inline:nn { authortitle, editortitle, endorsertitle }
  { \cs_if_exist:cF {#1} { \cs_new_protected:cpn {#1} ##1##2 { } } }
\clist_map_inline:nn { placepreprint, placereprint }
  { \cs_if_exist:cF {#1} { \cs_new_protected:cpn {#1} { } } }
```

M.4 Abstract

The abstract can be given in the preamble or in the document, as environment or in the command form `\abstract{`⟨*text*⟩`}`, before or directly after `\maketitle`. Before the title is made the abstract is stored. An abstract environment directly after `\maketitle` is stored as well and the title is made at the end of the environment. An abstract later in the document is typeset by classes that allow this (svjour3 and the KOMA-Script classes); otherwise it is written to the auxiliary file and used in the next run. Classes without abstract, such as scrbook, get the environment as well, and the abstract is ignored with a warning.

```
\cs_new_protected:Npn \__hep_jr_store_abstract:n #1
  {
    \tl_gset:Nn \g__hep_jr_abstract_tl {#1}
    \bool_gset_true:N \g__hep_jr_abstract_bool
  }
\cs_new_protected:Npn \hep@journal@abstract #1
  {
    \tl_gset:Nn \g__hep_jr_aux_abstract_tl {#1}
    \bool_gset_true:N \g__hep_jr_aux_abstract_bool
  }
\cs_new_protected:Npn \__hep_jr_abstract:n #1
  {
    \bool_if:NTF \g__hep_jr_made_bool
      { \__hep_jr_late_abstract:n {#1} }
      {
        \__hep_jr_store_abstract:n {#1}
        \bool_if:NT \g__hep_jr_pending_bool
          { \group_insert_after:N \__hep_jr_render: }
      }
  }
```

```
\cs_new_protected:Npn \__hep_jr_late_abstract:n #1
  {
    \cs_if_exist_use:cF
      { __hep_jr_ \g__hep_jr_backend_str _late_abstract:n }
      {
        \bool_if:NF \g__hep_jr_aux_abstract_bool
          { \msg_warning:nn { hep-journal } { late-abstract } }
        \iow_now:Ne \@auxout
          { \exp_not:N \hep@journal@abstract { \exp_not:n {#1} } }
        \use_none:n
      }
      {#1}
  }
\cs_if_exist:NF \abstract { \newenvironment { abstract } { } { } { } }
\RenewEnviron { abstract }
  { \exp_args:NV \__hep_jr_abstract:n \BODY }
\cs_gset_eq:NN \__hep_jr_abstract_environment: \abstract
\cs_gset_protected:Npn \abstract
  {
    \str_if_eq:VnTF \@currenvir { abstract }
      { \__hep_jr_abstract_environment: }
      {
        \bool_if:NTF \g__hep_jr_made_bool
          { \__hep_jr_late_abstract:n }
          { \__hep_jr_store_abstract:n }
      }
  }
\cs_gset_protected:cpn { abstract* }
  { \maketitle \begin { abstract } }
\cs_gset_protected:cpn { endabstract* } { \end { abstract } }
```

Keep copies of the user commands, so that they can be reinstalled after the class commands have been used.

```
\clist_map_inline:Nn \c__hep_jr_class_clist
  {
    \cs_if_exist:cT {#1}
      {
        \exp_args:Ncc \NewCommandCopy
          { __hep_jr_user_ #1 : } {#1}
      }
  }
\cs_new_protected:Npn \__hep_jr_install:n #1
  {
    \clist_map_inline:nn {#1}
      { \cs_gset_eq:cc {##1} { __hep_jr_user_ ##1 : } }
  }
```

M.5 Title

`\maketitle` looks ahead for an abstract environment, skipping spaces, paragraphs and the `\Hy@maketitle@end` of HYPERREF, which wraps `\maketitle`. The title is made by collecting the code for the class in a sequence, restoring the class macros, and running the code. If HYPERREF has wrapped `\maketitle`, the wrapper is kept around the class `\maketitle`.

```
\cs_new_protected:Npn \__hep_jr_maketitle:
  { \bool_if:NF \g__hep_jr_made_bool { \__hep_jr_peek: } }
\cs_gset_eq:NN \maketitle \__hep_jr_maketitle:
\bool_new:N \g__hep_jr_hyperref_bool
\cs_new_protected:Npn \__hep_jr_peek:
  {
    \peek_remove_spaces:n
      {
        \cs_if_exist:NTF \Hy@maketitle@end
          {
            \peek_meaning_remove:NTF \Hy@maketitle@end
              {
                \bool_gset_true:N \g__hep_jr_hyperref_bool
                \__hep_jr_peek:
              }
              { \__hep_jr_peek_next: }
          }
          { \__hep_jr_peek_next: }
      }
  }
\cs_new_protected:Npn \__hep_jr_peek_next:
  {
    \peek_remove_spaces:n
      {
        \peek_meaning:NTF \par
          { \__hep_jr_peek_par:w }
          {
            \peek_meaning:NTF \begin
              { \__hep_jr_peek_begin:w }
              { \__hep_jr_render: }
          }
      }
  }
\cs_new_protected:Npn \__hep_jr_peek_par:w \par { \__hep_jr_peek: }
\cs_new_protected:Npn \__hep_jr_peek_begin:w \begin #1
  {
    \str_if_eq:nnTF {#1} { abstract }
      {
        \bool_gset_true:N \g__hep_jr_pending_bool
        \begin {#1}
      }
      { \__hep_jr_render: \begin {#1} }
  }
\cs_new_protected:Npn \__hep_jr_emit:n #1
```

```
  { \seq_gput_right:Nn \g__hep_jr_code_seq {#1} }
\cs_generate_variant:Nn \__hep_jr_emit:n { e }
\cs_new_protected:Npn \__hep_jr_prepare:
  {
    \bool_gset_true:N \g__hep_jr_made_bool
    \bool_gset_false:N \g__hep_jr_pending_bool
    \bool_if:NF \g__hep_jr_abstract_bool
      {
        \bool_if:NT \g__hep_jr_aux_abstract_bool
          {
            \exp_args:NV \__hep_jr_store_abstract:n
              \g__hep_jr_aux_abstract_tl
          }
      }
    \seq_gclear:N \g__hep_jr_code_seq
    \seq_if_empty:NF \g__hep_jr_editor_seq
      { \__hep_jr_unsupported:n { editor } }
    \__hep_jr_check_labels:
  }
\cs_new_protected:Npn \__hep_jr_render:
  {
    \__hep_jr_prepare:
    \use:c { __hep_jr_ \g__hep_jr_backend_str _code: }
    \bool_if:NT \g__hep_jr_hyperref_bool
      {
        \bool_gset_false:N \g__hep_jr_hyperref_bool
        \Hy@maketitle@end
      }
    \__hep_jr_run:
  }
\cs_new_protected:Npn \__hep_jr_run:
  {
    \__hep_jr_pdf_info:
    \cs_gset_eq:NN \__hep_jr_wrapper: \maketitle
    \__hep_jr_restore:
    \cs_if_exist:NT \HyOrg@maketitle
      {
        \cs_if_eq:NNT \HyOrg@maketitle \__hep_jr_maketitle:
          {
            \cs_gset_eq:NN \HyOrg@maketitle \maketitle
            \cs_gset_eq:NN \maketitle \__hep_jr_wrapper:
          }
      }
    \__hep_jr_use_code:
    \__hep_jr_after_title:
  }
\cs_new_protected:Npn \__hep_jr_use_code:
  {
    \seq_gconcat:NNN \g__hep_jr_trace_seq
      \g__hep_jr_trace_seq \g__hep_jr_code_seq
```

```
    \tl_set:Ne \l__hep_jr_tmp_tl
      { \seq_use:Nn \g__hep_jr_code_seq { } }
    \tl_use:N \l__hep_jr_tmp_tl
  }
\cs_new_protected:Npn \__hep_jr_after_title:
  {
    \__hep_jr_install:n { abstract, endabstract }
    \cs_gset_protected:Npn \email ##1 { \hep@email {##1} }
    \cs_gset_protected:Npn \orcid ##1
      { \online { https://orcid.org/##1 } {##1} }
  }
\AddToHook { enddocument }
  {
    \bool_if:NF \g__hep_jr_made_bool
      { \msg_warning:nn { hep-journal } { no-title } }
  }
```

M.6 Labels

Warn about labels without affiliation and affiliations without author.

```
\cs_new_protected:Npn \__hep_jr_check_labels:
  {
    \seq_clear:N \l__hep_jr_tmp_seq
    \int_step_inline:nn { \g__hep_jr_authors_int }
      {
        \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
          {
            \prop_if_in:NnF \g__hep_jr_affil_prop {####1}
              { \msg_warning:nnn { hep-journal } { label } {####1} }
            \seq_put_right:Nn \l__hep_jr_tmp_seq {####1}
          }
      }
    \seq_map_inline:Nn \g__hep_jr_affil_seq
      {
        \seq_if_in:NnF \l__hep_jr_tmp_seq {##1}
          { \msg_warning:nnn { hep-journal } { unused } {##1} }
      }
  }
```

`\__hep_jr_labels:N` sets a sequence to all used labels in the order of first use.

```
\cs_new_protected:Npn \__hep_jr_labels:N #1
  {
    \seq_clear:N #1
    \int_step_inline:nn { \g__hep_jr_authors_int }
      {
        \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
          {
            \prop_if_in:NnT \g__hep_jr_affil_prop {####1}
              { \seq_if_in:NnF #1 {####1} { \seq_put_right:Nn #1 {####1} } }
```

```
          }
      }
  }
\cs_new:Npn \__hep_jr_name:n #1
  { \exp_not:v { \__hep_jr_field:nn {#1} { name_tl } } }
\cs_new:Npn \__hep_jr_affil:n #1
  { \exp_not:e { \prop_item:Nn \g__hep_jr_affil_prop {#1} } }
\cs_new:Npn \__hep_jr_full_title:
  {
    \exp_not:V \g__hep_jr_title_tl
    \tl_if_empty:NF \g__hep_jr_subtitle_tl
      { : ~ \exp_not:V \g__hep_jr_subtitle_tl }
  }
```

M.7 PDF information

Set the PDF title, author and keywords unless set by the user.

```
\cs_new_protected:Npn \__hep_jr_pdf_info:
  {
    \cs_if_exist:NT \hypersetup
      {
        \tl_if_empty:cT { @pdftitle }
          { \hypersetup { pdftitle = { \__hep_jr_full_title: } } }
        \tl_if_empty:cT { @pdfauthor }
          {
            \seq_clear:N \l__hep_jr_tmp_seq
            \int_step_inline:nn { \g__hep_jr_authors_int }
              {
                \seq_put_right:Ne \l__hep_jr_tmp_seq
                  { \__hep_jr_name:n {##1} }
              }
            \hypersetup
              {
                pdfauthor =
                  { \seq_use:Nnnn \l__hep_jr_tmp_seq
                      { ~and~ } { ,~ } { ,~and~ } }
              }
          }
        \tl_if_empty:NF \g__hep_jr_keywords_tl
          {
            \tl_if_empty:cT { @pdfkeywords }
              { \hypersetup { pdfkeywords = \g__hep_jr_keywords_tl } }
          }
      }
  }
```

M.8 Backends

Code shared by the backends and warnings for unsupported data.

```
\cs_new_protected:Npn \__hep_jr_emit_title:
  {
    \__hep_jr_emit:e
      {
        \exp_not:N \title
        \tl_if_empty:NF \g__hep_jr_short_title_tl
          { [ \exp_not:V \g__hep_jr_short_title_tl ] }
        { \__hep_jr_full_title: }
      }
  }
\cs_new_protected:Npn \__hep_jr_emit_date:
  {
    \bool_if:NT \g__hep_jr_date_bool
      {
        \__hep_jr_emit:e
          { \exp_not:N \date { \exp_not:V \g__hep_jr_date_tl } }
      }
  }
\cs_new_protected:Npn \__hep_jr_emit_keywords:
  {
    \tl_if_empty:NF \g__hep_jr_keywords_tl
      {
        \__hep_jr_emit:e
          { \exp_not:N \keywords { \exp_not:V \g__hep_jr_keywords_tl } }
      }
  }
\cs_new_protected:Npn \__hep_jr_emit_abstract:
  {
    \bool_if:NT \g__hep_jr_abstract_bool
      {
        \__hep_jr_emit:e
          {
            \exp_not:N \begin { abstract }
            \exp_not:V \g__hep_jr_abstract_tl
            \exp_not:N \end { abstract }
          }
      }
  }
\cs_new:Npn \__hep_jr_arxiv_link:n #1
  {
    \exp_not:N \href { https://arxiv.org/abs/#1 }
      { \exp_not:N \nolinkurl {#1} }
  }
\cs_new_protected:Npn \__hep_jr_no_series:
  {
    \tl_if_empty:NF \g__hep_jr_series_tl
      { \__hep_jr_unsupported:n { series } }
  }
\cs_new_protected:Npn \__hep_jr_no_preprint:
  {
```

```
    \seq_if_empty:NF \g__hep_jr_preprint_seq
      { \__hep_jr_unsupported:n { preprint } }
    \seq_if_empty:NF \g__hep_jr_arxiv_seq
      { \__hep_jr_unsupported:n { arxiv } }
  }
\cs_new_protected:Npn \__hep_jr_no_reprint:
  {
    \seq_if_empty:NF \g__hep_jr_reprint_seq
      { \__hep_jr_unsupported:n { reprint } }
    \seq_if_empty:NF \g__hep_jr_doi_seq
      { \__hep_jr_unsupported:n { doi } }
  }
\cs_new_protected:Npn \__hep_jr_no_orcid:
  {
    \int_step_inline:nn { \g__hep_jr_authors_int }
      {
        \seq_if_empty:cF { \__hep_jr_field:nn {##1} { orcid_seq } }
          { \__hep_jr_unsupported:n { orcid } }
      }
  }
\cs_new_protected:Npn \__hep_jr_no_date:
  {
    \bool_if:NT \g__hep_jr_date_bool
      { \__hep_jr_unsupported:n { date } }
  }
```

M.8.1 JHEP and JCAP

The labels become letters in the order of first use, thanks become `\note`s with numbers and emails `\emailAdd`s. The series becomes the `\subheader`, the first arXiv number the `\arxivnumber`.

```
\cs_new_protected:Npn \__hep_jr_sissa_code:
  {
    \__hep_jr_no_reprint:
    \__hep_jr_no_orcid:
    \__hep_jr_no_date:
    \tl_if_empty:NF \g__hep_jr_series_tl
      {
        \__hep_jr_emit:e
          { \exp_not:N \subheader { \exp_not:V \g__hep_jr_series_tl } }
      }
    \__hep_jr_emit_title:
    \__hep_jr_labels:N \l__hep_jr_tmp_seq
    \prop_clear:N \l__hep_jr_letter_prop
    \seq_map_indexed_inline:Nn \l__hep_jr_tmp_seq
      {
        \prop_put:Nne \l__hep_jr_letter_prop {##2}
          { \int_to_alph:n {##1} }
      }
    \int_zero:N \l__hep_jr_tmp_int
    \int_step_inline:nn { \g__hep_jr_authors_int }
```

```
    {
      \clist_clear:N \l__hep_jr_tmp_clist
      \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
        {
          \prop_get:NnNT \l__hep_jr_letter_prop {####1}
            \l__hep_jr_label_tl
            {
              \clist_put_right:NV \l__hep_jr_tmp_clist
                \l__hep_jr_label_tl
            }
        }
      \seq_map_inline:cn { \__hep_jr_field:nn {##1} { thanks_seq } }
        {
          \int_incr:N \l__hep_jr_tmp_int
          \clist_put_right:Ne \l__hep_jr_tmp_clist
            { \int_use:N \l__hep_jr_tmp_int }
        }
      \__hep_jr_emit:e
        {
          \exp_not:N \author
          \clist_if_empty:NF \l__hep_jr_tmp_clist
            { [ \clist_use:Nn \l__hep_jr_tmp_clist { , } ] }
          { \__hep_jr_name:n {##1} }
        }
    }
  \seq_map_indexed_inline:Nn \l__hep_jr_tmp_seq
    {
      \__hep_jr_emit:e
        {
          \exp_not:N \affiliation [ \int_to_alph:n {##1} ]
            { \__hep_jr_affil:n {##2} }
        }
    }
  \int_zero:N \l__hep_jr_tmp_int
  \int_step_inline:nn { \g__hep_jr_authors_int }
    {
      \seq_map_inline:cn { \__hep_jr_field:nn {##1} { thanks_seq } }
        {
          \int_incr:N \l__hep_jr_tmp_int
          \__hep_jr_emit:e
            {
              \exp_not:N \note [ \int_use:N \l__hep_jr_tmp_int ]
                { \exp_not:n {####1} }
            }
        }
      \seq_map_inline:cn { \__hep_jr_field:nn {##1} { email_seq } }
        { \__hep_jr_emit:n { \emailAdd {####1} } }
    }
  \__hep_jr_sissa_preprint:
  \seq_if_empty:NF \g__hep_jr_arxiv_seq
```

```
      {
        \__hep_jr_emit:e
          {
            \exp_not:N \arxivnumber
              { \seq_item:Nn \g__hep_jr_arxiv_seq { 1 } }
          }
      }
    \__hep_jr_emit_keywords:
    \bool_if:NT \g__hep_jr_abstract_bool
      {
        \__hep_jr_emit:e
          { \exp_not:N \abstract { \exp_not:V \g__hep_jr_abstract_tl } }
      }
    \__hep_jr_emit:n { \maketitle }
  }
\cs_new_eq:NN \__hep_jr_jhep_code: \__hep_jr_sissa_code:
\cs_new_eq:NN \__hep_jr_jcap_code: \__hep_jr_sissa_code:
```

Preprint numbers and further arXiv numbers are placed right aligned in the header, by `\preprint` in JHEP and appended to `\@fpheader` in JCAP.

```
\cs_new_protected:Npn \__hep_jr_sissa_preprint:
  {
    \seq_set_eq:NN \l__hep_jr_tmp_seq \g__hep_jr_preprint_seq
    \seq_map_indexed_inline:Nn \g__hep_jr_arxiv_seq
      {
        \int_compare:nNnT {##1} > 1
          {
            \seq_put_right:Ne \l__hep_jr_tmp_seq
              { arXiv:~ \__hep_jr_arxiv_link:n {##2} }
          }
      }
    \seq_if_empty:NF \l__hep_jr_tmp_seq
      {
        \tl_set:Ne \l__hep_jr_tmp_tl
          {
            \exp_not:N \begin { tabular } [ t ] { @ { } r @ { } }
            \seq_use:Nn \l__hep_jr_tmp_seq { \\ }
            \exp_not:N \end { tabular }
          }
        \cs_if_exist:NTF \__hep_jr_class_preprint:
          {
            \__hep_jr_emit:e
              { \exp_not:N \preprint { \exp_not:V \l__hep_jr_tmp_tl } }
          }
          {
            \__hep_jr_emit:e
              {
                \exp_not:N \g@addto@macro \exp_not:N \@fpheader
                  { \exp_not:N \hfill \exp_not:V \l__hep_jr_tmp_tl }
              }
```

```
          }
      }
  }
```

M.8.2 REVTEX

Every author is followed by the emails, thanks and affiliations. REVTEX merges identical affiliations.

```
\cs_new_protected:Npn \__hep_jr_revtex_code:
  {
    \__hep_jr_no_series:
    \__hep_jr_no_reprint:
    \__hep_jr_no_orcid:
    \__hep_jr_emit_title:
    \int_step_inline:nn { \g__hep_jr_authors_int }
      {
        \__hep_jr_emit:e { \exp_not:N \author { \__hep_jr_name:n {##1} } }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { email_seq } }
          { \__hep_jr_emit:n { \email {####1} } }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { thanks_seq } }
          { \__hep_jr_emit:n { \thanks {####1} } }
        \bool_set_false:N \l_tmpa_bool
        \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
          {
            \prop_if_in:NnT \g__hep_jr_affil_prop {####1}
              {
                \bool_set_true:N \l_tmpa_bool
                \__hep_jr_emit:e
                  { \exp_not:N \affiliation { \__hep_jr_affil:n {####1} } }
              }
          }
        \bool_if:NF \l_tmpa_bool
          {
            \prop_if_empty:NF \g__hep_jr_affil_prop
              { \__hep_jr_emit:n { \noaffiliation } }
          }
      }
    \seq_map_inline:Nn \g__hep_jr_preprint_seq
      { \__hep_jr_emit:n { \preprint {##1} } }
    \seq_map_inline:Nn \g__hep_jr_arxiv_seq
      {
        \__hep_jr_emit:e
          { \exp_not:N \preprint { arXiv:~ \__hep_jr_arxiv_link:n {##1} } }
      }
    \__hep_jr_emit_date:
    \__hep_jr_emit_keywords:
    \__hep_jr_emit_abstract:
    \__hep_jr_emit:n { \maketitle }
  }
```

M.8.3 AMS article

Every author is followed by an `\address` per affiliation, the emails and thanks.

```
\cs_new_protected:Npn \__hep_jr_amsart_code:
  {
    \__hep_jr_no_series:
    \__hep_jr_no_preprint:
    \__hep_jr_no_reprint:
    \__hep_jr_no_orcid:
    \__hep_jr_emit_title:
    \int_step_inline:nn { \g__hep_jr_authors_int }
      {
        \__hep_jr_emit:e { \exp_not:N \author { \__hep_jr_name:n {##1} } }
        \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
          {
            \prop_if_in:NnT \g__hep_jr_affil_prop {####1}
              {
                \__hep_jr_emit:e
                  { \exp_not:N \address { \__hep_jr_affil:n {####1} } }
              }
          }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { email_seq } }
          { \__hep_jr_emit:n { \email {####1} } }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { thanks_seq } }
          { \__hep_jr_emit:n { \thanks {####1} } }
      }
    \__hep_jr_emit_date:
    \__hep_jr_emit_keywords:
    \__hep_jr_emit_abstract:
    \__hep_jr_emit:n { \maketitle }
  }
```

M.8.4 Springer

The SVJOUR3 class takes the abstract after `\maketitle` with the keywords inside.

```
\cs_new_protected:Npn \__hep_jr_springer_code:
  {
    \__hep_jr_no_series:
    \__hep_jr_no_preprint:
    \__hep_jr_no_reprint:
    \__hep_jr_no_orcid:
    \__hep_jr_emit:e
      {
        \exp_not:N \title
        { \exp_not:V \g__hep_jr_title_tl }
        \tl_if_empty:NF \g__hep_jr_subtitle_tl
          { \exp_not:N \subtitle { \exp_not:V \g__hep_jr_subtitle_tl } }
      }
    \cs_if_exist:NTF \thankstext
      { \__hep_jr_springer_epj: }
```

```
      { \__hep_jr_springer_plain: }
    \__hep_jr_emit_date:
    \__hep_jr_emit:n { \maketitle }
    \bool_if:NT \g__hep_jr_abstract_bool
      {
        \__hep_jr_emit:e
          {
            \exp_not:N \begin { abstract }
            \exp_not:V \g__hep_jr_abstract_tl
            \tl_if_empty:NF \g__hep_jr_keywords_tl
              {
                \exp_not:N \keywords
                  { \exp_not:V \g__hep_jr_keywords_tl }
              }
            \exp_not:N \end { abstract }
          }
      }
  }
```

The EPJ style uses `\thanksref`, `\thankstext` and labelled institutes.

```
\cs_new_protected:Npn \__hep_jr_springer_epj:
  {
    \__hep_jr_labels:N \l__hep_jr_tmp_seq
    \tl_clear:N \l__hep_jr_tmp_tl
    \int_zero:N \l__hep_jr_tmp_int
    \int_step_inline:nn { \g__hep_jr_authors_int }
      {
        \clist_clear:N \l__hep_jr_tmp_clist
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { email_seq } }
          {
            \int_incr:N \l__hep_jr_tmp_int
            \clist_put_right:Ne \l__hep_jr_tmp_clist
              { hep-note- \int_use:N \l__hep_jr_tmp_int }
            \__hep_jr_emit:e
              {
                \exp_not:N \thankstext
                  { hep-note- \int_use:N \l__hep_jr_tmp_int }
                  { e-mail:~ \exp_not:N \hep@email { \exp_not:n {####1} } }
              }
          }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { thanks_seq } }
          {
            \int_incr:N \l__hep_jr_tmp_int
            \clist_put_right:Ne \l__hep_jr_tmp_clist
              { hep-note- \int_use:N \l__hep_jr_tmp_int }
            \__hep_jr_emit:e
              {
                \exp_not:N \thankstext
                  { hep-note- \int_use:N \l__hep_jr_tmp_int }
                  { \exp_not:n {####1} }
```

```
            }
        }
      \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
        {
          \prop_if_in:NnT \g__hep_jr_affil_prop {####1}
            {
              \clist_put_right:Nn \l__hep_jr_tmp_clist
                { hep-inst-####1 }
            }
        }
      \tl_put_right:Ne \l__hep_jr_tmp_tl
        {
          \int_compare:nNnF {##1} = 1 { \exp_not:N \and }
          \__hep_jr_name:n {##1}
          \clist_if_empty:NF \l__hep_jr_tmp_clist
            {
              \exp_not:N \thanksref
                { \clist_use:Nn \l__hep_jr_tmp_clist { , } }
            }
        }
    }
  \__hep_jr_emit:e { \exp_not:N \author { \exp_not:V \l__hep_jr_tmp_tl } }
  \seq_if_empty:NF \l__hep_jr_tmp_seq
    {
      \__hep_jr_emit:e
        {
          \exp_not:N \institute
            {
              \seq_map_indexed_function:NN \l__hep_jr_tmp_seq
                \__hep_jr_springer_institute:nn
            }
        }
    }
}
\cs_new:Npn \__hep_jr_springer_institute:nn #1#2
{
  \int_compare:nNnF {#1} = 1 { \exp_not:N \and }
  \__hep_jr_affil:n {#2} \exp_not:N \label { hep-inst-#2 }
}
```

The plain svjour3 class lists every author with affiliations, emails and thanks in `\institute`, separated by `\at`.

```
\cs_new_protected:Npn \__hep_jr_springer_plain:
{
  \tl_clear:N \l__hep_jr_tmp_tl
  \tl_clear:N \l__hep_jr_label_tl
  \int_step_inline:nn { \g__hep_jr_authors_int }
    {
      \tl_put_right:Ne \l__hep_jr_tmp_tl
        {
```

```
            \int_compare:nNnF {##1} = 1 { \exp_not:N \and }
            \__hep_jr_name:n {##1}
          }
        \seq_clear:N \l__hep_jr_tmp_seq
        \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
          {
            \prop_if_in:NnT \g__hep_jr_affil_prop {####1}
              {
                \seq_put_right:Ne \l__hep_jr_tmp_seq
                  { \__hep_jr_affil:n {####1} }
              }
          }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { email_seq } }
          {
            \seq_put_right:Nn \l__hep_jr_tmp_seq
              { \email {####1} }
          }
        \seq_map_inline:cn { \__hep_jr_field:nn {##1} { thanks_seq } }
          { \seq_put_right:Nn \l__hep_jr_tmp_seq {####1} }
        \tl_put_right:Ne \l__hep_jr_label_tl
          {
            \int_compare:nNnF {##1} = 1 { \exp_not:N \and }
            \__hep_jr_name:n {##1}
            \exp_not:N \at
            \seq_use:Nn \l__hep_jr_tmp_seq { \\ }
          }
      }
    \__hep_jr_emit:e { \exp_not:N \author { \exp_not:V \l__hep_jr_tmp_tl } }
    \__hep_jr_emit:e
      { \exp_not:N \institute { \exp_not:V \l__hep_jr_label_tl } }
  }
\cs_new_protected:Npn \__hep_jr_springer_late_abstract:n #1
  {
    \__hep_jr_class_abstract: #1
    \cs_if_exist_use:N \__hep_jr_class_endabstract:
  }
```

M.8.5 PoS

Every author gets one `\author` with affiliations and emails. The series becomes `\FullConference`, the title `\ShortTitle`, unless they are given, and the keywords are appended to the abstract. The class makes the title at the beginning of the document. If the abstract is known by then, the title is made there and `\maketitle` does nothing. Otherwise the data are handed over at the beginning of the document and the abstract and the title follow at `\maketitle`.

```
\cs_new_protected:Npn \__hep_jr_pos_code:
  {
    \__hep_jr_no_preprint:
    \__hep_jr_no_reprint:
    \__hep_jr_no_orcid:
    \__hep_jr_no_date:
```

```
\__hep_jr_emit:e { \exp_not:N \title { \__hep_jr_full_title: } }
\legacy_if:nF { @shorttitle }
  {
    \__hep_jr_emit:e
      {
        \exp_not:N \ShortTitle
          {
            \tl_if_empty:NTF \g__hep_jr_short_title_tl
              { \exp_not:V \g__hep_jr_title_tl }
              { \exp_not:V \g__hep_jr_short_title_tl }
          }
      }
  }
\legacy_if:nF { @conf }
  {
    \tl_if_empty:NF \g__hep_jr_series_tl
      {
        \__hep_jr_emit:e
          {
            \exp_not:N \FullConference
              { \exp_not:V \g__hep_jr_series_tl }
          }
      }
  }
\int_step_inline:nn { \g__hep_jr_authors_int }
  {
    \seq_clear:N \l__hep_jr_tmp_seq
    \seq_put_right:Ne \l__hep_jr_tmp_seq
      {
        \__hep_jr_name:n {##1}
        \seq_map_function:cN
          { \__hep_jr_field:nn {##1} { thanks_seq } }
          \__hep_jr_pos_thanks:n
      }
    \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
      {
        \prop_if_in:NnT \g__hep_jr_affil_prop {####1}
          {
            \seq_put_right:Ne \l__hep_jr_tmp_seq
              { \__hep_jr_affil:n {####1} }
          }
      }
    \seq_if_empty:cF { \__hep_jr_field:nn {##1} { email_seq } }
      {
        \seq_put_right:Ne \l__hep_jr_tmp_seq
          {
            E-mail:~
            \seq_map_function:cN
              { \__hep_jr_field:nn {##1} { email_seq } }
              \__hep_jr_pos_email:n
```

```
            }
        }
      \__hep_jr_emit:e
        {
          \exp_not:N \author
            { \seq_use:Nn \l__hep_jr_tmp_seq { \\ } }
        }
    }
}
\cs_new:Npn \__hep_jr_pos_thanks:n #1
  { \exp_not:N \thanks { \exp_not:n {#1} } }
\cs_new:Npn \__hep_jr_pos_email:n #1
  { \exp_not:N \email { \exp_not:n {#1} } \c_space_tl }
\cs_new_protected:Npn \__hep_jr_pos_abstract:
  {
    \__hep_jr_emit:e
      {
        \exp_not:N \abstract
          {
            \bool_if:NT \g__hep_jr_abstract_bool
              { \exp_not:V \g__hep_jr_abstract_tl }
            \tl_if_empty:NF \g__hep_jr_keywords_tl
              {
                \exp_not:N \par \exp_not:N \medskip \exp_not:N \noindent
                \exp_not:N \textit { Keywords: }
                \c_space_tl \exp_not:V \g__hep_jr_keywords_tl
              }
          }
      }
  }
\str_if_eq:VnT \g__hep_jr_backend_str { pos }
  {
    \cs_gset_eq:NN \__hep_jr_pos_maketitle: \auto@maketitle
    \AddToHook { begindocument }
      {
        \bool_if:NF \g__hep_jr_abstract_bool
          {
            \bool_if:NT \g__hep_jr_aux_abstract_bool
              {
                \exp_args:NV \__hep_jr_store_abstract:n
                  \g__hep_jr_aux_abstract_tl
              }
          }
        \bool_if:NTF \g__hep_jr_abstract_bool
          {
            \__hep_jr_prepare:
            \__hep_jr_pos_code:
            \__hep_jr_pos_abstract:
            \__hep_jr_run:
          }
```

```
      {
        \seq_gclear:N \g__hep_jr_code_seq
        \__hep_jr_pos_code:
        \legacy_if_gset_true:n { @abstract }
        \cs_gset_eq:NN \auto@maketitle \prg_do_nothing:
        \cs_gset_protected:Npn \__hep_jr_pos_code:
          {
            \__hep_jr_pos_abstract:
            \__hep_jr_emit:n
              {
                \legacy_if_set_true:n { @titlepage }
                \__hep_jr_pos_maketitle:
                \legacy_if_set_false:n { @titlepage }
              }
          }
        \__hep_jr_restore:
        \__hep_jr_use_code:
        \__hep_jr_install:n
          {
            title, author, affiliation, email, thanks, keywords,
            date, subtitle, preprint, abstract, endabstract
          }
        \cs_gset_eq:NN \maketitle \__hep_jr_maketitle:
      }
  }
}
```

M.8.6 KOMA-Script

The series becomes the `\subject` and the preprint and arXiv numbers are placed right aligned in the `\titlehead`. The authors are separated by `\and` and get the letters of their affiliations in the order of first use, unless there is only one affiliation, and their emails and thanks as `\thanks`. The affiliations are listed in `\publishers`, which follows the authors and the date. The abstract follows the title, with the keywords appended. The scrbook class has no abstract.

```
\cs_new_protected:Npn \__hep_jr_koma_code:
  {
    \__hep_jr_no_reprint:
    \__hep_jr_no_orcid:
    \tl_if_empty:NF \g__hep_jr_series_tl
      {
        \__hep_jr_emit:e
          { \exp_not:N \subject { \exp_not:V \g__hep_jr_series_tl } }
      }
    \__hep_jr_koma_titlehead:
    \__hep_jr_emit:e
      { \exp_not:N \title { \exp_not:V \g__hep_jr_title_tl } }
    \tl_if_empty:NF \g__hep_jr_subtitle_tl
      {
        \__hep_jr_emit:e
          { \exp_not:N \subtitle { \exp_not:V \g__hep_jr_subtitle_tl } }
```

```
    }
  \__hep_jr_labels:N \l__hep_jr_tmp_seq
  \prop_clear:N \l__hep_jr_letter_prop
  \int_compare:nNnT { \seq_count:N \l__hep_jr_tmp_seq } > 1
    {
      \seq_map_indexed_inline:Nn \l__hep_jr_tmp_seq
        {
          \prop_put:Nne \l__hep_jr_letter_prop {##2}
            { \int_to_alph:n {##1} }
        }
    }
  \tl_clear:N \l__hep_jr_tmp_tl
  \int_step_inline:nn { \g__hep_jr_authors_int }
    {
      \clist_clear:N \l__hep_jr_tmp_clist
      \clist_map_inline:cn { \__hep_jr_field:nn {##1} { labels_clist } }
        {
          \prop_get:NnNT \l__hep_jr_letter_prop {####1}
            \l__hep_jr_label_tl
            {
              \clist_put_right:NV \l__hep_jr_tmp_clist
                \l__hep_jr_label_tl
            }
        }
      \tl_put_right:Ne \l__hep_jr_tmp_tl
        {
          \int_compare:nNnF {##1} = 1 { \exp_not:N \and }
          \__hep_jr_name:n {##1}
          \clist_if_empty:NF \l__hep_jr_tmp_clist
            {
              \exp_not:N \textsuperscript
                { \clist_use:Nn \l__hep_jr_tmp_clist { , } }
            }
          \seq_map_function:cN
            { \__hep_jr_field:nn {##1} { email_seq } }
            \__hep_jr_koma_email:n
          \seq_map_function:cN
            { \__hep_jr_field:nn {##1} { thanks_seq } }
            \__hep_jr_pos_thanks:n
        }
    }
  \__hep_jr_emit:e { \exp_not:N \author { \exp_not:V \l__hep_jr_tmp_tl } }
  \__hep_jr_emit_date:
  \seq_if_empty:NF \l__hep_jr_tmp_seq
    {
      \__hep_jr_emit:e
        {
          \exp_not:N \publishers
            {
              \seq_map_indexed_function:NN \l__hep_jr_tmp_seq
```

```
                \__hep_jr_koma_affil:nn
              }
          }
      }
    \__hep_jr_emit:n { \maketitle }
    \cs_if_exist:NTF \__hep_jr_class_abstract:
      {
        \bool_if:NT \g__hep_jr_abstract_bool
          {
            \__hep_jr_emit:e
              {
                \exp_not:N \begin { abstract }
                \exp_not:V \g__hep_jr_abstract_tl
                \__hep_jr_koma_keywords:
                \exp_not:N \end { abstract }
              }
          }
      }
      {
        \bool_if:NT \g__hep_jr_abstract_bool
          { \__hep_jr_unsupported:n { abstract } }
      }
    \bool_if:nT
      {
        ! \bool_if_p:N \g__hep_jr_abstract_bool
        || ! \cs_if_exist_p:N \__hep_jr_class_abstract:
      }
      {
        \tl_if_empty:NF \g__hep_jr_keywords_tl
          { \__hep_jr_unsupported:n { keywords } }
      }
  }
\cs_new:Npn \__hep_jr_koma_email:n #1
  {
    \exp_not:N \thanks
      { E-mail:~ \exp_not:N \hep@email { \exp_not:n {#1} } }
  }
\cs_new:Npn \__hep_jr_koma_affil:nn #1#2
  {
    \int_compare:nNnF {#1} = 1 { \exp_not:N \par }
    \int_compare:nNnT { \seq_count:N \l__hep_jr_tmp_seq } > 1
      { \exp_not:N \textsuperscript { \int_to_alph:n {#1} } }
    \__hep_jr_affil:n {#2}
  }
\cs_new:Npn \__hep_jr_koma_keywords:
  {
    \tl_if_empty:NF \g__hep_jr_keywords_tl
      {
        \exp_not:N \par \exp_not:N \medskip \exp_not:N \noindent
        \exp_not:N \textit { Keywords: }
```

```
        \c_space_tl \exp_not:V \g__hep_jr_keywords_tl
      }
  }
```

Preprint and arXiv numbers are listed right aligned in the title head.

```
\cs_new_protected:Npn \__hep_jr_koma_titlehead:
  {
    \seq_set_eq:NN \l__hep_jr_tmp_seq \g__hep_jr_preprint_seq
    \seq_map_inline:Nn \g__hep_jr_arxiv_seq
      {
        \seq_put_right:Ne \l__hep_jr_tmp_seq
          { arXiv:~ \__hep_jr_arxiv_link:n {##1} }
      }
    \seq_if_empty:NF \l__hep_jr_tmp_seq
      {
        \__hep_jr_emit:e
          {
            \exp_not:N \titlehead
              {
                \exp_not:N \hfill
                \exp_not:N \begin { tabular } [ t ] { @ { } r @ { } }
                \seq_use:Nn \l__hep_jr_tmp_seq { \\ }
                \exp_not:N \end { tabular }
              }
          }
      }
  }
```

An abstract later in the document is typeset where it stands.

```
\cs_new_protected:Npn \__hep_jr_koma_late_abstract:n #1
  {
    \cs_if_exist:NTF \__hep_jr_class_abstract:
      {
        \__hep_jr_class_abstract: #1
        \__hep_jr_class_endabstract:
      }
      { \__hep_jr_unsupported:n { abstract } }
  }
\ExplSyntaxOff
```

</journal>

N Tests

The journal test documents share their title data, written with the macros of HEP-TITLE, so that only the class differs.

N.1 JHEP

<*testJHEP>

```
\documentclass[a4paper, 11pt]{article}
\usepackage[jhep, lang=english]{hep-paper}
```

</testJHEP>

N.2 JCAP

<*testJCAP>

```
\documentclass[a4paper, 11pt]{article}
\usepackage[jcap, lang=english]{hep-paper}
```

</testJCAP>

N.3 AMSArt

<*testAMSArt>

```
\documentclass{amsart}
\usepackage[lang=english]{hep-paper}
```

</testAMSArt>

N.4 PoS

The series becomes the full conference information.

<*testPoS>

```
\documentclass{PoS}
\usepackage[lang=english]{hep-paper}
\series{Full conference}
```

</testPoS>

N.5 RevTeX

<*testRevTeX>

```
\documentclass[
 aps,
 prl,
 reprint,
 nofootinbib,
 nobibnotes,
 superscriptaddress,
 preprintnumbers,
]{revtex4-2}
\usepackage{hep-paper}
```

</testRevTeX>

N.6 Springer

<*testSpringer>

```
\documentclass[twocolumn,epjc3]{svjour3}
\usepackage[lang=english]{hep-paper}
\journalname{Journal name}
```

</testSpringer>

N.7 KOMA-Script

The series becomes the subject and the preprint number is placed in the title head.

<*testKOMA>

```
\documentclass{scrartcl}
\usepackage[lang=english]{hep-paper}
\series{Series}
\preprint{PREPRINT-1}
```

</testKOMA>

N.8 Common part

<*testJHEP|testJCAP|testAMSArt|testPoS|testRevTeX|testSpringer|testKOMA>

```
\usepackage[math]{blindtext}

\title{Title}
\subtitle{Subtitle}

\author[a]{First author \email{first@email.com}}
\author[a,b]{Second author}
\email{second@email.com}
\thanks{Second thanks}
\affiliation[a]{First affiliation}
\affiliation[b]{Second affiliation}

\keywords{First keyword, second keyword}

\begin{document}

\maketitle

\begin{abstract}
\blindtext
\end{abstract}

\Blinddocument

\end{document}
```

</testJHEP|testJCAP|testAMSArt|testPoS|testRevTeX|testSpringer|testKOMA>

N.9 Beamer

<*testBeamer>

```
\documentclass{beamer}

\usepackage[lang=english]{hep-paper}
\usepackage[math]{blindtext}

\title{Title}
\subtitle{Subtitle}
\author{Author}
\institute{Institute}
\date{Event}

\begin{document}

\frame{\titlepage}

\begin{frame}{Frame title}
\blindtext
\end{frame}

\end{document}
```

</testBeamer>

O Readme

<*readme>

```
# The ‘hep-paper‘ package

Complete article preamble: fonts, math, title, references, floats,
acronyms and bibliography

## Introduction

The ‘hep-paper‘ package is the aggregate publication setup for the HEP
package suite. It configures the page geometry, language, fonts,
hyperlinks, title data, bibliography, acronyms, references, floats, text
helpers, and math fonts by loading the corresponding modular packages
with publication-oriented defaults.

For usual publications it is enough to load additionally to the ‘article‘
class without optional arguments only the ‘hep-paper‘ package.

    \documentclass{article}
    \usepackage{hep-paper}

## Author
```

```
1671
1672 Jan Hajer
1673
1674 ## License
1675
1676 This file may be distributed and/or modified under the conditions of the
1677 ‘LaTeX‘ Project Public License, either version 1.3c of this license or
1678 (at your option) any later version. The latest version of this license is
1679 in ‘http://www.latex-project.org/lppl.txt‘ and version 1.3c or later is
1680 part of all distributions of LaTeX version 2005/12/01 or later.
```

</readme>

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Change History

v1.1
General: First release on CTAN: a documented style file for publications in high energy physics. 1
v1.2
General: Added package options for class, font, language, bibliography, citation, and compatibility controls. 1
v1.3
General: Added JHEP and JCAP options, RevTeX compatibility, improved acronym macros, math-font fixes, enumdescript and citation support, and moved the biblatex data model into its own file. 1
v1.4
General: Added automatic compatibility option selection, PubMed IDs, and bibliography and source-map updates. 1
v1.5
General: Reduced the number of math alphabets used in sans-serif mode, added subtitle and title options, and switched to standard class options. . . 1
v1.6
General: Added two-column mode. 1
v1.7
General: Split title, acronym, and bibliography logic into dedicated style files and expanded the title macros. . . 1
v1.8
General: Expanded thanks and reference-label handling, refined the title page, reimplemented selected physics macros, and made \mathrm produce upright Greek. 1

v2.0
General: Split independent logic into the modular hep-font, hep-math-font, hep-text, hep-math, hep-bibliography, hep-acronym, hep-title, and hep-float packages. 1

v2.1
General: Added the hep-reference package and included the v1.1 updates of the modules. 1

v2.2
General: Added hep-graphic, hep-plot, and hep-feynman and included the v1.2 updates of the modules. 1

v2.3
General: Included the v1.3 updates of the modules, among them the reworked Greek letters of hep-math-font. 1

v2.4
General: Included the v1.4 updates of the modules, among them the font setup for LuaLaTeX and XeLaTeX, reprint, DOI, and arXiv lines in the title, and local and global float placement. 1

v2.5
General: Raised the LaTeX format requirement and refreshed the documentation and README. 1

v2.6
General: false restore the title macros of the journals, fixed an endless loop of the REVTEX mode without title, added the koma compatibility mode for the KOMA-Script classes, and ignored compatibility options with a warning if their class or style is not available. . . . 1