The mathphys-letter Class.[*]

2016/03/01

A class to typeset letters in the official format and with the official header of Fachschaft MathPhys at the Heidelberg University. It's mainly based on the scrlttr2 class by Markus Kohm.

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1 Introduction

The mathphys-letter class is derived from the scrlttr2 class out of the KOMA bundle. It makes very little changes to the macros of the original class. What it does is to make sure there is the official header and footer of MathPhys on every first page of a letter.

There are a few files needed to use mathphys-letter, these include:

- `mathphys-letter.pdf`: this documentation, derived from `mathphys-letter.dtx`

- `mathphys-letter.cls`: the class file, also derived from `mathphys-letter.dtx`, if you got this pdf file by running pdfLATEX you probably will have gotten the class file as well.

- `MathPhysLogo*.pdf`: vector images of the association's logos, going to be placed in the upper right corner of each letter.

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[*]This document corresponds to mathphys-letter v1.3, dated 2016/03/01
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2 Usage

You can use this class nearly the same way you use the scrlttr2 class with one exception: You don't need to provide all of your personal information with \setkomavar{fromaddress}{⟨address⟩}, ...
All this stuff as well as the right placing of those elements is done by the class.

Some might ask why I dont use a letter class option file (.lco). This is kind of a matter of taste, there is nothing (yet) that couldnt have been done inside an lco file. I dont want the user to be too happy to try some new things since a corporate design should be really consistent.

2.1 scrlttr2

This section describes in short words, some features of the scrlttr2 class which might be relevant when writing letters in general and writing letters for MathPhys in particular. It cannot replace a further reading of the KOMA script documentation [1][1] which I strongly advice.

Options can be passed to scrlttr2 by \KOMAoption{⟨options⟩}. In mathphys-letter some of these options are already set. The following table summarizes the options that might be relevant to a mathphys-letter author.

Option	Value	Description
draft	⟨boolean⟩	Draws little boxes next to overfull paragraphs.
priority	⟨A,B⟩	Sets a priority tag for international letters.

scrlttr2 defines a very useful variable handling routine. You can easily set variables using the command \setkomavar{⟨variable⟩}{⟨value⟩}. The following table gives a summary of the most important variables

Variable	Description
customer	Adds a 'customer No' entry to the reference line.
date	Changes the printed date.
fromemail	Places the given mail address in the contact person field.
fromname	Places the given name as contact person under the logo.
invoice	Adds a 'invoice No' entry to the reference line.
myref	Adds a 'our reference' entry to the reference line.
place	Changes the place, where the letter has been written.
signature	Changes the name underneath the signature.
specialmail	Prints ⟨value⟩ in the upper right corner of the address field.
subject	Sets the letter's subject line.
yourmail	Adds a 'your letter of' entry to the reference line.
yourref	Adds a 'your reference' entry to the reference line.

2.2 The Reference Line

\MathPhysReflineTrue The Layout intends the date to be placed inside the right column. This can lead to a strange appearance if the reference line is used on the same height. To avoid

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[1]This should be available under your TeX distribution via texdoc scrguien for the International version or texdoc scrguide for the German equivalent.

this behavior some horizontal space needs to be added to the reference line. This can be done by the `\MathPhysReflineTrue` command in the documents preamble. So if you want to typeset a refline use this command![2]

2.3 Colors

<div style="text-align: right">

`\color{unihd}`
`\textcolor{unihd}{⟨text⟩}`

</div>

mathphys-letter uses the xcolor package to define colored parts of the letterhead (i.e. the line and contact information in the footer). The Heidelberg Universitys house color (a dark red) is defined under the name unihd and can be used via the macros `\color{unihd}` and `\textcolor{unihd}{⟨text⟩}`.

2.4 Language Support

Language support is not yet implemented. You can only use this class in German right now. Look for updates in a newer version.

2.5 Example

A ready to use mathphys-letter could be something like this:

```
1  \documentclass{mathphys-letter}
2
3  \usepackage[ngerman]{babel}
4  \usepackage[T1]{fontenc}
5  \usepackage[utf8]{inputenc}
6  \usepackage{
7      blindtext,
8      microtype
9  }
10
11 \setkomavar{fromname}{Kai-Uwe Grabowski}
12 \setkomavar{fromemail}{kai-uwe@mathphys.fsk.uni-heidelberg.de}
13 \setkomavar{subject}{Wichtiger Betreff}
14
15 \begin{document}
16     \begin{letter}{
17         Universität Heidelberg\\
18         Grabengasse 1\\
19         D-69124 Heidelberg\\
20     }
21
22         \opening{Sehr geehrte Damen und Herren,}
23             \blindtext
24         \closing{Mit freundlichem Gruß,}
25
26     \end{letter}
27 \end{document}
28
```

---

[2]This command will go away as soon as I implement a proper test for refline-content

3 Implementation

Load the underlying class scrlttr2 and set all the required options:

```
29 \LoadClass[
30      fontsize=11pt,
31      paper=a4,
32      parskip=half,
33      backaddress=plain,
34      refline=nodate,
35      numericaldate=true,
36      firsthead=false,
37 ]{scrlttr2}[2011/04/02]
```

Load all the required packages

```
38 \RequirePackage{
39      graphicx,      % use graphic-files
40      kvoptions,     % key=value-stuff
41      lastpage,    % page n of m
42      marvosym,      % for the little phone and fax symbols
43      tikz,          % used for absolute placing of logo and stuff
44      xcolor,        % colored text
45      ifthen,        % for if-then-ele-stuff
46      hyperref,      % use cool pdf-features
47 }
48 \RequirePackage[mono=false]{libertine}    % use linux-libertine font family
```

Set page dimensions as we need them:

```
49 \LoadLetterOption{DIN}
50 \LetterOptionNeedsPapersize{paper=a4}{a4}
51
52 \setlength{\textwidth}{115.5mm}
53 \setlength{\rightmargin}{62.86mm}
54 \setlength{\marginparwidth}{50.86mm}
55 \setlength{\marginparsep}{6mm}
56 \setlength\headsep{22mm}
57 \setlength{\marginparsep}{7.1mm}
58
59 \@setplength{lochpos}{14.3mm}
60 \@setplength{locvpos}{65mm}
61 \@setplength{locheight}{50mm}
62
63 \renewcommand{\raggedsignature}{\raggedright}
64
65 \hypersetup{
66      pdfborder={0 0 0},
67 }
```

Process key-value-options:

```
68 \SetupKeyvalOptions{
69   family=MathPhys,
70   prefix=MathPhys@
71 }
72 \DeclareStringOption[default]{fachschaft}
73 \ifthenelse{\equal{\MathPhys@fachschaft}{mathematik}}{\def\MathPhysLogo{MathPhysLogoMathe}}{
```

```
74 \ifthenelse{\equal{\MathPhys@fachschaft}{physik}}{\def\MathPhysLogo{MathPhysLogoPhysik}}{
75 \ifthenelse{\equal{\MathPhys@fachschaft}{informatik}}{\def\MathPhysLogo{MathPhysLogoInfo}}{
76 \ifthenelse{\equal{\MathPhys@fachschaft}{mathinf}}{\def\MathPhysLogo{MathPhysLogoMathInf}}{
77 \def\MathPhysLogo{MathPhysLogo}}}}
78 \DeclareBoolOption[true]{twoside}
79 \DeclareComplementaryOption{oneside}{twoside}
80 \ProcessKeyvalOptions*
```

Set some KOMA variables:

```
81 \setkomavar{backaddress}{Fachschaft MathPhys\\INF 205\\Raum 01.301\\69120 Heidelberg}
82 \setkomavar{place}{Heidelberg}
83 \setkomavar{backaddressseparator}{ \textperiodcentered\ }
```

Set the contact persons name and mail in the location field if `fromname` and `fromemail` are defined:

```
84 \AtBeginDocument{
85 \setkomavar{location}{%
86 \ifkomavarempty{fromname}{
87 \vspace*{31.11mm}
88 }{%
89 \textsf{\textbf{Ansprechpartner:}}\\
90 \usekomavar{fromname}\\
91 \ifkomavarempty{fromemail}{}{
92 \usekomavar{fromemail}
93 }
94 \vspace*{18.83mm}%18.83
95 }
96
97 \scriptsize \textsf\datename\\\normalsize\today
98 }
99 }
```

\MathPhysReflineTrue   add another field to the refline:

```
100 \newkomavar*[\null]{null}
101 \def\MathPhysReflineTrue{\setkomavar{null}{\null}}
```

\MathPhysSetLogo   Define how the logo is placed:

```
102 \iftrue
103 \def\MathPhysSetLogo{
104 \tikz [remember picture,overlay]
105 \node [shift={(-46.15mm,-19.12mm)}]
106     at (current page.north east)
107       {\includegraphics%[width=92.29mm, height=38.24mm]
108       {\MathPhysLogo.pdf}};
109 \tikz [remember picture,overlay]
110     \node [shift={(-59.71mm,19.12mm)}]
111       at (current page.south east)
112       {\textcolor{unihd}{\rule{0.859mm}{26.241mm}}};
113 }
114 \def\MathPhysSetBars{
115 \tikz [remember picture,overlay]
116     \node [shift={(-59.71mm,-19.12mm)}]
117       at (current page.north east)
118       {\textcolor{unihd}{\rule{0.859mm}{26.241mm}}};
```

```
119 \tikz [remember picture,overlay]
120     \node [shift={(-59.71mm,19.12mm)}]
121       at (current page.south east)
122       {\textcolor{unihd}{\rule{0.859mm}{26.241mm}}};
123 }
```

\MathPhysSetFooter Define how the footer (contact informations) is placed:

```
124 \def\MathPhysSetFooter{
125 \tikz [remember picture,overlay]
126 \node [
127 shift={(-85.21mm,19.12mm)}
128 ]
129     at (current page.south east)
130     {\parbox{4.4cm}{
131 \color{gray}
132 \sffamily
133 \scriptsize
134 \begin{flushright}
135 \Telefon\quad 06221\,54-14\,999\\
136 \FAX\quad 06221\,54-161\,14\,999\\
137 \Letter\quad \href{mailto:mathphys@uni-hd.de}{mathphys@uni-hd.de}\\
138 \href{http://mathphys.uni-hd.de}{http://mathphys.uni-hd.de}
139 \end{flushright}
140 }};
141 \tikz [remember picture,overlay]
142 \node [
143 shift={(-34.01mm,19.12mm)}
144 ]
145     at (current page.south east)
146     {\parbox{4.4cm}{
147 \color{gray}
148 \sffamily
149 \scriptsize
150 \begin{flushleft}
151 Fachschaft MathPhys\\
152 Im Neuenheimer Feld 205\\
153 Raum 01.301\\
154 69120 Heidelberg
155 \end{flushleft}
156 }};
157 }
```

\MathPhysSetPageNumber Place page n of m on consecutive pages:

```
158 \def\MathPhysSetPageNumber{
159 \tikz [remember picture,overlay]
160 \node [shift={(-34.01mm,-47.15mm)}]
161     at (current page.north east)
162     {\parbox{4.4cm}{\textcolor{gray}{\normalfont \sffamily Seite \thepage\ von \pageref{LastP
163 }
```

Now call the above macros in the right time:

```
164 \setkomavar{firstfoot}{
165 \MathPhysSetLogo
```

```
166 \MathPhysSetFooter
167 }
168 \setkomavar{nexthead}{
169 \ifMathPhys@twoside
170 \ifthenelse{\isodd{\thepage}}{
171 \MathPhysSetLogo
172 }{
173 \MathPhysSetBars
174 }
175 \else
176 \MathPhysSetLogo
177 \fi
178 \MathPhysSetPageNumber
179 }
180 \setkomavar{nextfoot}{}
181 \pagestyle{myheadings}
```

unihd   Last but not least, define the color `unihd`:

```
182 \iftrue
183 \definecolor{unihd}{RGB}{153,0,0}
184 \else
185 \definecolor{unihd}{cmyk}{0,1,1,.4}
186 \fi
```

References

[1] M. Kohm, J.-U. Morowski: *KOMA-Skript*, 2009