

The `amsbooka` package

American Mathematical Society
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1 Introduction

This package is an add-on to the $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ document classes for monographs. It provides the facility to include an author's name with a part or chapter title of a monograph, and automatically pass the author information on to the table of contents for presentation in a style compatible with the regular (series-specific) TOC style.

This package may become part of the $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ collection of document classes and related packages.

Standard file identification.

```
1 \NeedsTeXFormat{LaTeX2e}% LaTeX 2.09 can't be used (nor non-LaTeX)
2 [1995/06/01]% LaTeX date must be June 1995 or later
3 \ProvidesPackage{amsbooka}[2008/05/19 v2.06 monograph part/chapter authors]
```

2 User instructions

A part or chapter with no associated author is input in the usual way:

```
\part{full title}
```

```
\chapter[short title]{full title}
```

The part or chapter title will be set in the regular style for the series.

If an author is to be associated with a chapter, then the short title *must* be provided, and the author is included within the full title, thus:

```
\chapter[short title]{full title \author{author name}}
```

This works for both `\chapter` and `\chapter*`. Similarly, a part title with an associated author must include the author as follows:

```
\part{full title \author{author name}}
```

No short title is required for a part title with author.

The author name will be set following the title and also included in the table of contents, both in the appropriate style for the series.

The front matter of the book must include (at least) a `\title` and `\maketitle`. If these are absent, an unintelligible error message will result.

3 Implementation

This package is meant for use with all AMS monograph series. Two series, GSM and STML, have special requirements, so provide matching strings that can be used to identify them.

```
4 \def\@gsm{gsm-1}
5 \def\@stml{stml-1}
```

3.1 Chapter headings

@schaptera In order to associate an author name with an unnumbered chapter, we need to redefine `\@schapter` to accept a bracketed optional version for the running head. The original version, without optional text, is still required for the bibliography and index as well as for other unauthored chapters. Use the original `\@schapter` for this by giving it another name, and check again for the presence of a bracketed option.

```
@schapterb
6 \let\@schapterb\@schapter
7 \def\@schapter{\secdef\@schaptera\@schapterb}
8 \def\@schaptera[#1]#2{\typeout{#1}%
9   \let\@secnumber\@empty
10  \def\@toclevel{0}%
11  \ifx\chaptername\appendixname \@tocwriteb\tocappendix{chapter}{#2}%
12  \else \@tocwriteb\tocchapter{chapter}{#2}\fi
13  \chaptermark{#1}%
14  \addtocontents{lof}{\protect\addvspace{10\p@}}%
15  \addtocontents{lot}{\protect\addvspace{10\p@}}%
16  \@makeschapterhead{#2}\@afterheading
17 }
```

@makechapterhead Redefine the commands `\@makechapterhead` and `\@makeschapterhead` from the regular monograph document classes, handling special cases as necessary.

```
@makeschapterhead
18 \def\@makechapterhead#1{%
19   \ifx\@classname\@gsm \@makegsmchapterhead{#1}%
20   \else \ifx\@classname\@stml \@makestmlchaphead{#1}%
21   \else \@makeplainchapterhead{#1}%
22   \fi \fi
23 }
24 \newif\if@schapter \@schapterfalse
25 \def\@makeschapterhead#1{%
26   \@schaptertrue
27   \ifx\@classname\@gsm \@makegsmchapterhead{#1}%
28   \else \ifx\@classname\@stml \@makestmlchaphead{#1}%
29   \else \@makeplainchapterhead{#1}%
30   \fi \fi
31 }
```

@makeplainchapterhead The “plain” chapter head style is used for nearly all AMS monograph series. The title is set in the usual style, with the author name centered below in small caps.

```
32 \def\@makeplainchapterhead#1{%
```

```

33 \global\topskip 7.5pc\relax
34 \begingroup
35 \def\title{}%
36 \def\author##1{\vskip1pc\fontsize{\xipt}{14}\mdseries\textsc{##1}}%
37 \fontsize{\xivpt}{18}\bfseries\centering
38 \ifnum\c@secnumdepth>\m@ne
39 \leavevmode \hskip-\leftskip
40 \rlap{\vbox to\z@{\vss
41 \centerline{\normalsize\mdseries
42 \MakeUppercase{\chaptername}\enspace\thechapter}
43 \vskip 3pc}}\hskip\leftskip
44 \fi
45 #1\par \endgroup
46 \skip@34\p@ \advance\skip@-\normalbaselineskip
47 \vskip\skip@
48 }
49 \def\@makeschapterhead#1{\global\topskip 7.5pc\relax
50 \begingroup
51 \def\title{}%
52 \def\author##1{\vskip1pc\fontsize{\xipt}{14}\mdseries\textsc{##1}}%
53 \fontsize{\xivpt}{18}\bfseries\centering
54 #1\par \endgroup
55 \skip@34\p@ \advance\skip@-\normalbaselineskip
56 \vskip\skip@
57 }

```

`@makeruledchaphead` GSM and STML require a rule at the top of the page and a smaller rule above
`@makeruledschaphead` the page number at the bottom. Other specs are publication-specific.

```

58 \def\@makeruledchaphead#1{%
59 \global\topskip\normaltopskip
60 \begingroup
61 \def\author##1{\ \hfil \ \ \@chapauthorstyle ##1}%
62 \if@schapter
63 \else
64 \vbox to\topskip{%
65 \chapter@number
66 \vss
67 }\penalty\@M
68 \fi
69 \@chapheadstyle \raggedright
70 \noindent #1\par \endgroup
71 \if@index
72 \@indexstyle
73 \else
74 \@dropfolio
75 \@noindexstyle
76 \fi
77 \@afterheading
78 }
79 \def\@makeruledschaphead#1{%

```

```

80 \global\topskip\normaltopskip
81 \begingroup
82 \def\author##1{\ \hfil \ \ \@chapauthorstyle ##1}%
83 \@chapheadstyle \raggedright
84 \noindent #1\par \endgroup
85 \if@index
86   \@indexstyle
87 \else
88   \@dropfolio
89   \@noindexstyle
90 \fi
91 \@afterheading
92 }

```

@makegsmchapterhead The style for GSM requires a rule at the top of the page, with the chapter title flush left, bold, and the author information below the title also flush left and bold but in a smaller size.

```

93 \def\@makegsmchapterhead#1{%
94   \def\@chapheadstyle{\Huge\bfseries \hsize24pc
95     \top@space{11pc}}%
96   \def\@chapauthorstyle{\LARGE\bfseries}%
97   \def\@indexstyle{%
98     \ifx\@empty\indexintro
99       \bb@space{7.5pc}%
100    \else
101      \vspace{3pc}%
102      \begingroup \small
103        \parbox[t]{27pc}{\leftskip3pc\normalfont\indexintro\par}%
104      \endgroup
105      \bb@space{3pc}%
106    \fi
107    }%
108   \def\@noindexstyle{\bb@space{7.5pc}}%
109 %   \if@schapter
110 %     \@makeruledschaphead{#1}%
111 %   \else
112 %     \@makeruledchaphead{#1}%
113 %   \fi
114 }

```

@makestmlchaphead The style for STML is similar to that for GSM, except for the smaller page size and the author information set in lightface in the LARGE size.

```

115 \def\@makestmlchaphead#1{%
116   \def\@chapheadstyle{\fontsize\@xxpt{22}\selectfont\bfseries\hsize 21pc
117     \top@par@space{9pc}}%
118   \def\@chapauthorstyle{\LARGE\mdseries}%
119   \def\@indexstyle{%
120     \ifx\@empty\indexintro
121       \bb@par@space{6.5pc}%

```

```

122     \else
123         \vspace{2.5pc}%
124         \beginngroup \small
125             \parbox[t]{22.5pc}{\leftskip2.5pc\normalfont\indexintro\par}%
126         \endgroup
127         \bb@par@space{2.5pc}%
128     \fi
129 }%
130 \def\@noindexstyle{\bb@par@space{6.5pc}}%
131 \if@schapter
132     \@makeruledschaphead{#1}%
133 \else
134     \@makeruledchaphead{#1}%
135 \fi
136 }

```

3.2 Part headings

@plainpart The “plain” part head style is used for nearly all AMS monograph series. The title is set in the usual style, with the author name centered below in italic.

```

137 \def\partauthor{%
138     \def\author##1{\newline\phantom{Part 1.\enspace}{\mdseries\scshape##1}}
139 \def\@part[#1]#2{%
140     \ifnum \c@secnumdepth >-2\relax \refstepcounter{part}%
141         \addcontentsline{toc}{part}{\partname\ \thepart.%
142             \protect\partauthor\protect\enspace\protect\noindent#1}%
143     \else
144         \addcontentsline{toc}{part}{#1}\fi
145     \beginngroup
146     \def\author##1{\ \hfil \ \ \fontsize{\@xivpt}{20}\mdseries\itshape ##1}%
147     \centering
148     \ifnum \c@secnumdepth >-2\relax
149         {\fontsize{\@xvipt}{22}\bfseries
150             \partname\ \thepart} \vskip 20\p@ \fi
151     \fontsize{\@xxpt}{25}\bfseries
152     #1\vfil\vfil\endgroup \newpage\thispagestyle{empty}}
153 \def\@spart#1{\addcontentsline{toc}{part}%
154     {\protect\partauthor\protect\noindent#1}%
155     \beginngroup
156     \def\author##1{\ \hfil \ \ \fontsize{\@xivpt}{20}\mdseries\itshape ##1}%
157     \centering
158     \fontsize{\@xxpt}{25}\bfseries
159     #1\vfil\vfil\endgroup \newpage\thispagestyle{empty}}

```

@makegsmparthead The style for GSM requires a rule at the top of the page, with the chapter title flush left, bold, and the author information below the title also flush left and bold but in a smaller size.

```

160 \def\@makegsmparthead#1{%
161     \def\@partheadstyle{\Huge\bfseries \hspace{24pc}
162         \top@space{18pc}}%

```

```

163 \def\@partauthorstyle{\LARGE\bfseries}%
164 \if@spart
165   \@makeruledsparthead{#1}%
166 \else
167   \@makeruledparthead{#1}%
168 \fi
169 }

```

`@makestmlparthead` The style for STML is similar to that for GSM, except for the smaller page size and the author information set in lightface in the LARGE size.

3.3 Table of Contents

Allow more space for the page number than provided in `amsbook`; that is only 1.6em, and results in unpleasantly long text.

```

170 \setbox\z@\hbox{\kern1.5pc 999}
171 \renewcommand{\@pnumwidth}{\wd\z@}

```

`@tocline` Replace the `\@tocline` command to include the `\author` information. This will be set in small caps on the line following the chapter title, with the same indentation as the title.

```

172 \def\@tocline#1#2#3#4#5#6#7{\relax
173   \ifnum #1>\c@tocdepth % then omit
174   \else
175     \def\author##1{\newline\textsc{##1}}%
176     \par \addpenalty\@secpenalty\addvspace{#2}%
177     \begingroup \hyphenpenalty\@M
178     \@ifempty{#4}{%
179       \@tempdima\csname r@tocindent\number#1\endcsname\relax
180     }{%
181       \@tempdima#4\relax
182     }%
183     \parindent\z@ \leftskip#3\relax \advance\leftskip\@tempdima\relax
184     \rightskip\@pnumwidth plus.2\hsize \parfillskip-\@pnumwidth
185     #5\leavevmode\hskip-\@tempdima #6\nobreak\relax
186     \hfil\hbox to\@pnumwidth{\@tocpagenum{#7}}\par
187     \nobreak
188   \endgroup
189 \fi
190 }

```

3.4 Boilerplate

The usual `\endinput` to ensure that random garbage at the end of the file doesn't get copied by `docstrip`.

```

191 \endinput

```

Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

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