

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 [1994/12/01]% LaTeX date must December 1994 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
`@schapterb` 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.

```

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

```

18 \def\@makechapterhead#1{%
19   \ifx\@classname\@gsm \@makegsmchapterhead{#1}%
20   \else \ifx\@classname\@stml \@makestmlchapterhead{#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 \@makestmlchapterhead{#1}%
29   \else \@makeplainchapterhead{#1}%
30   \fi \fi
31 }
```

`@makeplainchapterhead` `@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\titl{{}}%
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\titl{{}}%
52   \def\author##1{\vskip1pc\fontsize{\@xipt}{14}\mdseries\textsc{##1}}%
```

```

53 \fontsize{\@xivpt}{18}\bfseries\centering
54 #1\par \endgroup
55 \skip34\p@ \advance\skip@-\normalbaselineskip
56 \vskip\skip@
57 }

```

lakeruledchapterhead GSM and STML require a rule at the top of the page and a smaller rule above
lakeruledschapterhead the page number at the bottom. Other specs are publication-specific.

```

58 \def\@makeruledchapterhead#1{%
59   \global\topskip\normaltopskip
60   \begingroup
61   \def\author##1{\ \hfil \ \ \@chapauthorstyle ##1}%
62   \vbox to\topskip{%
63     \chapter@number
64     \vss
65   }\penalty\@M
66   \@chapheadstyle \raggedright
67   \noindent #1\par \endgroup
68   \if@index
69     \@indexstyle
70   \else
71     \@dropfolio
72     \@noindexstyle
73   \fi
74   \@afterheading
75 }
76 \def\@makeruledschapterhead#1{%
77   \global\topskip\normaltopskip
78   \begingroup
79   \def\author##1{\ \hfil \ \ \@chapauthorstyle ##1}%
80   \@chapheadstyle \raggedright
81   \noindent #1\par \endgroup
82   \if@index
83     \@indexstyle
84   \else
85     \@dropfolio
86     \@noindexstyle
87   \fi
88   \@afterheading
89 }

```

@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.

```

90 \def\@makegsmchapterhead#1{%
91   \def\@chapheadstyle{\Huge\bfseries \hspace{24pc}
92     \top@space{11pc}}}%
93   \def\@chapauthorstyle{\LARGE\bfseries}%
94   \def\@indexstyle{%
95     \ifx\@empty\indexintro
96       \bb@space{7.5pc}%
97     \else
98       \vspace{3pc}%
99       \begingroup \small
100         \parbox[t]{27pc}{\leftskip3pc\normalfont\indexintro\par}%
101       \endgroup
102       \bb@space{3pc}%
103     \fi
104   }%

```

```

105 \def\@noindexstyle{\bb@space{7.5pc}}%
106 \if@schapter
107   \@makeruledschapterhead{#1}%
108 \else
109   \@makeruledchapterhead{#1}%
110 \fi
111 }

```

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.

@makestmlchapterhead

```

112 \def\@makestmlchapterhead#1{%
113   \def\@chapheadstyle{\fontsize{\@xxpt{22}}\selectfont\bfseries\hsize 21pc
114     \top@par@space{9pc}}%
115   \def\@chapauthorstyle{\LARGE\mdseries}%
116   \def\@indexstyle{%
117     \ifx\@empty\indexintro
118       \bb@par@space{6.5pc}%
119     \else
120       \vspace{2.5pc}%
121       \begingroup \small
122         \parbox[t]{22.5pc}{\leftskip2.5pc\normalfont\indexintro\par}%
123       \endgroup
124       \bb@par@space{2.5pc}%
125     \fi
126   }%
127   \def\@noindexstyle{\bb@par@space{6.5pc}}%
128   \if@schapter
129     \@makeruledschapterhead{#1}%
130   \else
131     \@makeruledchapterhead{#1}%
132   \fi
133 }

```

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.

```

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

```

```

155 \fontsize{\xxpt}{25}\bfseries
156 #1\vfil\vfil\endgroup \newpage\thispagestyle{empty}}

```

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.

```

157 \setbox\z@\hbox{\kern1.5pc 999}
158 \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.

```

159 \def\@tocline#1#2#3#4#5#6#7{\relax
160 \ifnum #1>\c@tocdepth % then omit
161 \else
162 \def\author##1{\newline\textsc{##1}}%
163 \par \addpenalty\@secpenalty\addvspace{#2}%
164 \begingroup \hyphenpenalty\@M
165 \@ifempty{#4}{%
166 \@tempdima\csname r@tocindent\number#1\endcsname\relax
167 }{%
168 \@tempdima#4\relax
169 }%
170 \parindent\z@ \leftskip#3\relax \advance\leftskip\@tempdima\relax
171 \rightskip\@pnumwidth plus.2\hsize \parfillskip-\@pnumwidth
172 #5\leavevmode\hskip-\@tempdima #6\nobreak\relax
173 \hfil\hbox to\@pnumwidth{\@tocpagenum{#7}}\par
174 \nobreak
175 \endgroup
176 \fi
177 }

```

3.4 Boilerplate

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

```
178 \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.

Symbols	<code>\@makechapterhead</code> .	<code>\@makehtmlchapterhead</code>
<code>\@afterheading</code> . . . . .	. . . . . <i>2</i> , <i>18</i> , <i>18</i>	. . . . . <i>20</i> , <i>28</i> , <i>112</i> , <i>112</i>
. <i>16</i> , <i>74</i> , <i>88</i>	<code>\@makegsmchapterhead</code>	<code>\@noindexstyle</code>
<code>\@chapauthorstyle</code> .	. . . . . <i>19</i> , <i>27</i> , <i>90</i> , <i>90</i>	. . . . . <i>72</i> , <i>86</i> , <i>105</i> , <i>127</i>
. <i>61</i> , <i>79</i> , <i>93</i> , <i>115</i>	<code>\@makeplainchapterhead</code>	<code>\@part</code> <i>136</i>
<code>\@chapheadstyle</code> . . .	. . . . . <i>21</i> , <i>32</i> , <i>32</i>	<code>\@plainpart</code> <i>134</i>
. <i>66</i> , <i>80</i> , <i>91</i> , <i>113</i>	<code>\@makeplainschapterhead</code>	<code>\@pnumwidth</code> <i>158</i> , <i>171</i> , <i>173</i>
<code>\@classname</code> . . . . .	. . . . . <i>29</i> , <i>32</i>	<code>\@schapter</code> <i>1</i> , <i>2</i> , <i>6</i> , <i>7</i>
. <i>19</i> , <i>20</i> , <i>27</i> , <i>28</i>	<code>\@makeruledchapterhead</code>	<code>\@schaptera</code> <i>6</i> , <i>7</i> , <i>8</i>
<code>\@dropfolio</code> <i>71</i> , <i>85</i>	. . . . . <i>58</i> , <i>58</i> , <i>109</i> , <i>131</i>	<code>\@schapterb</code> <i>6</i> , <i>6</i> , <i>7</i>
<code>\@gsm</code> <i>4</i> , <i>19</i> , <i>27</i>	<code>\@makeruledschapterhead</code>	<code>\@schapterfalse</code> <i>24</i>
<code>\@ifempty</code> <i>165</i>	. . . . . <i>58</i> , <i>76</i> , <i>107</i> , <i>129</i>	<code>\@schaptertrue</code> <i>26</i>
<code>\@indexstyle</code>	<code>\@makeschapterhead</code>	<code>\@secnumber</code> <i>9</i>
. <i>69</i> , <i>83</i> , <i>94</i> , <i>116</i> <i>2</i> , <i>18</i>	<code>\@secpenalty</code> <i>163</i>

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- \@stml 5, 20, 28
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- \@toclevel 10
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- \@tocpagenum 173
- \@tocwriteb 11, 12
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- \maketitle 1
- \MakeUppercase 42
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- \noindent 67, 81, 139, 151
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