The \texttt{amsbooka} package

American Mathematical Society
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1 Introduction

This package is an add-on to the \texttt{AMS-\LaTeX} 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. It also provides facilities to add elements often associated with separately authored chapters, including a copyright notice, unnumbered footnotes, and a section-level bibliography.

This package may become part of the \texttt{AMS-\LaTeX} collection of document classes and related packages.

Standard file identification.
1 \texttt{\texttt{\textbackslash NeedsTeXFormat\{LaTeX2e\}} \texttt{% LaTeX 2.09 can't be used (nor non-LaTeX)}}
2 \texttt{\texttt{\textbackslash [1995/06/01\%} \texttt{LaTeX date must be June 1995 or later}}
3 \texttt{\texttt{\textbackslash ProvidesPackage\{amsbooka\}\{2014/07/11 v2.08 monograph part/chapter authors\}}

2 User instructions

Getting started: The front matter of the book must include (at least) a \texttt{\textbackslash title} and \texttt{\textbackslash maketitle}. If these are absent, an unintelligible error message will result. This is caused by the redefinition of the \texttt{\textbackslash author} command, which is ordinarily expected to occur only in the book's front matter.

2.1 Chapter and part headings

A part or chapter with no associated author is input in the usual way:
\texttt{\textbackslash part\{\texttt{\langle full title\rangle}\}}
\texttt{\textbackslash chapter\{\texttt{\langle short title\rangle}\}\{\texttt{\langle full title\rangle}\}}

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 \texttt{must} be provided, and the author is included within the full title, thus:
\texttt{\textbackslash chapter\{\texttt{\langle short title\rangle}\}\{\texttt{\langle full title\rangle}\ \texttt{\textbackslash author\{\langle author name\rangle\}}\}}

This works for both \texttt{\textbackslash chapter} and \texttt{\textbackslash chapter*}. Similarly, a part title with an associated author must include the author as follows:
\texttt{\textbackslash part\{\texttt{\langle full title\rangle}\ \texttt{\textbackslash author\{\langle author name\rangle\}}\}}
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.

When an author is specified for a chapter, the left-hand running head will be the author name; the right-hand running head will be the chapter title, taken from the short title. For a chapter with no specified author, the running heads will be the same as for an “ordinary” monograph: chapter title on the left and section heading on the right, except that, if the chapter has no sections, the chapter title will also appear on the right.

By default, “authored” chapters will be numbered, but chapter numbers will be omitted from the running heads. (Most volumes encountered so far in this style are essentially collections.) Chapter numbers can be restored to the running heads by using the documentclass option \texttt{rhchapnum}. In the present version of \texttt{amsbooka} this is an all-or-nothing proposition, but this decision may be reconsidered if an example emerges in which there is justification for including chapter numbers in some running heads but not in others.

Similarly, the “standard” monograph running heads (chapter on the left, section on the right) can be forced for all authored chapters by specifying the documentclass option \texttt{rhchapsec}. With this option, chapter numbers will not be suppressed. Again, this is an all-or-nothing choice.

2.2 Elements at the bottom of the first page

If information such as a previous publication or an alternate source is noted, this should appear on the first page of the chapter as an unnumbered footnote. Enter this immediately after the \texttt{chapter} title, using this command:
\begin{verbatim}
\barefootnote{⟨footnote text⟩}
\end{verbatim}

If a separate copyright notice is required for a chapter, enter it as follows:
\begin{verbatim}
\copyrightinfo{⟨year⟩}{⟨copyright holder⟩}
\end{verbatim}

If this command is not input for a chapter, no notice will appear.

2.3 Bibliography within a chapter

The bibliography of a monograph usually appears as a separate chapter. However, for collections addressed by the present package, each individual chapter may have its own reference list, which should be treated as a section.

If the chapter bibliography has been prepared for \texttt{amsrefs}, specify \texttt{bibsection} to obtain the proper format. (See the \texttt{amsrefs} documentation for details.)

If the chapter bibliography has been prepared using \texttt{BibTeX}, substitute
\begin{verbatim}
\begin{inchapterbibliography}
...
\end{inchapterbibliography}
\end{verbatim}

for the usual \texttt{thebibliography} environment. The actual contents of the bibliography should be included within the chapter file, not read in from a separate \texttt{.bbl} file. If the heading of this section needs to be changed,
\begin{verbatim}
\renewcommand{\bibname}{⟨...⟩}
\end{verbatim}
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. Other series may be added to this list, so also provide a switch that can be used to identify them collectively.

\def\@gsm{gsm-l}
\def\@stml{stml-l}
\newif\if@ruledchapterhead
\@ruledchapterheadfalse
\ifx\@classname\@gsm \@ruledchapterheadtrue
\else\ifx\@classname\@stml \@ruledchapterheadtrue
\fi
\fi

Some ramifications with running heads are best addressed with defaults that can be overridden by options.

First option: force “standard” (chapter/section) running heads.
\newif\if@rhchapnum
\@rhchapnumfalse
\DeclareOption{rhchapnum}{\@rhchapnumtrue}
\ProcessOptions\relax

Next option: force “standard” (chapter/section) running heads. This also turns on chapter numbers in the running heads.
\newif\if@rhchapsec
\@rhchapsecfalse
\DeclareOption{rhchapsec}{\@rhchapsectrue \@rhchapnumtrue}
\ProcessOptions\relax

3.1 Chapter headings

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.

\let\@schapterb\@schapter
\def\@schapter{secdef\@schaptera\@schapterb}
\def\@schaptera[#1]#2\{\typeout{#1}\
\let\@secnumber\@empty
\def\@toclevel{0}\
\ifx\chaptername\appendixname \@tocwriteb\tocappendix{chapter}{#2}\fi
\chaptermark{#1}\
\addtocontents{lof}{\protect\addvspace{10\p@}}\
\addtocontents{lot}{\protect\addvspace{10\p@}}\
\@makeschapterhead{#2}\@afterheading
}
\@makechapterhead\ and \@makeschapterhead from the regular monograph document classes, handling special cases as necessary.

\def\@makechapterhead#1{%\ifx\@classname\@gsm \@makegsmchapterhead{#1}\
  \else \ifx\@classname\@stml \@makestmlchapterhead{#1}\
    \else \@makeplainchapterhead{#1}\
  \fi \fi
\}
\def\@makeschapterhead#1{%\@schaptertrue
  \ifx\@classname\@gsm \@makegsmchapterhead{#1}\
    \else \ifx\@classname\@stml \@makestmlchapterhead{#1}\
      \else \@makeplainschapterhead{#1}\
    \fi \fi
  \fi \fi
\}

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.

The author name is set up to be the left-hand running head, as it would be for a journal or proceedings article. This will be effected only for chapters with an \author. It can also be suppressed with the \[rhchapsec\] option.

If a copyright notice is included, suppress it for the next chapter.

\def\@makeplainchapterhead#1{%\global\topskip 7.5pc\relax
  \@setcopyright\let\copyrightyear\@empty\begingroup
    \def\title{}\def\author##1{%\if@rhchapsec
      \else \markleft{{\MakeUppercase{##1}}}\fi
    \vskip1pc\fontsize{\@xiipt}{14}\mdseries\textsc{##1}\fontsize{\@xivpt}{18}\bfseries\centering
      \ifnum\c@secnumdepth>\m@ne \leavevmode \hskip-\leftskip
        \rlap{\vbox to\z@{\vss
          \centerline{\normalsize\mdseries\MakeUppercase{\chaptername}\enspace\thechapter}
        \vskip 3pc}}\hskip\leftskip
      \fi
    #1\par \endgroup
  \skip@34\p@ \advance\skip@-\normalbaselineskip
  \vskip\skip@
\}
\def\@makeschapterhead#1{%\global\topskip 7.5pc\relax
3. IMPLEMENTATION

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

\makestmlchapterhead  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. IMPLEMENTATION

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3.2 Running heads

Unless overridden by the \(\textbackslash[\) option, omit chapter numbers from the right-hand running head with chapter title. (Explicit line breaks with \(\textbackslash\) are converted to spaces.)

3.3 Part headings

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.
3.4 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.

@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.

3.5 Other features

Copyright notice

A copyright notice is sometimes wanted on separately authored chapters of a "composite" monograph or volume of collected works. Provide the ability to add this feature if required, using the same command, \copyrightinfo, used for journal and proceedings articles. \copyrightinfo is present in amsbook, so it suffices to set an appropriate default to suppress it unless it is requested explicitly.

For now, don't allow a copyright notice for GSM or STML or other books with a similar design. The need is unlikely, but the more important reason is that the style needs rethinking if such a notice is to be included.
3. IMPLEMENTATION

barefootnote  “Bare” footnotes
Unnumbered footnotes (such as those that appear on the first page of a journal or proceedings article) are needed to provide information regarding earlier publication and the like.

\newcommand{\barefootnote}[1]{{%\let\@makefnmark\relax \let\@thefnmark\relax \@footnotetext{#1}}}

inchapterbibliography  Chapter-specific bibliography
Separately authored chapters often have individual bibliographies, which should be presented as sections, not chapters. For now, disable the mark for the section header (copying the code from the initial value in amsbook); it should not appear as the right-hand running head if the author/chapter title headers are in effect. Still to be determined is whether the section title “Bibliography” should appear in the running head if no author is specified and the “standard” running heads are used.

\newenvironment{inchapterbibliography}[1]{{%\let\sectionmark\@gobble \@xp\section\@xp*\@xp{\bibname}\normalfont\footnotesize\labelsep .5em\relax \renewcommand\theenumiv{\arabic{enumiv}}\let\p@enumiv\@empty \list{\@biblabel{\theenumiv}}{\settowidth\labelwidth{\@biblabel{#1}}\leftmargin\labelwidth \advance\leftmargin\labelsep \usecounter{enumiv}}\sloppy \clubpenalty\@M \widowpenalty\clubpenalty \sfcode\'=.@m \def\@noitemerr{\@latex@warning{Empty ‘inchapterbibliography’ environment}}}%\endlist}

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