The **apxproof** package

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2016/10/27   v1.0.0-dev

Abstract

This package facilitates the writing of scientific article with proofs deferred to the appendix.

1   Usage

TODO

2   Implementation

```
 1 \RequirePackage{fancyvrb}
 2 \RequirePackage{ifthen}
 3 \RequirePackage{environ}
 4 \RequirePackage{bibunits}
 5 \@ifpackageloaded{amsthm}{}{%
 6   \let\proof\undefined
 7   \let\endproof\undefined
 8 }
 9 \RequirePackage{amsthm}
10 \RequirePackage{etoolbox}
11 \RequirePackage{kvoptions}
12
13 \makeatletter
14
15 \SetupKeyvalOptions{
16   family=AXP,
17   prefix=AXP@
18 }
19
20 \DeclareStringOption[append]{appendix}
21
22 \ProcessLocalKeyvalOptions*
23
24 \ifthenelse{\equal{\AXP@appendix}{append}}{
```

```latex
25    \message{apxproof: Appendix material appended to the document}
26 }{\ifthenelse{\equal{\AXP@appendix}{strip}}{
27    \message{apxproof: Appendix material stripped}
28 }{\ifthenelse{\equal{\AXP@appendix}{inline}}{
29    \message{apxproof: Appendix material inlined within the document}
30 }{
31    \errmessage{Error: unsupported option appendix=\AXP@appendix for
32    package apxproof}
33 }}}

35 \newcommand\newtheoremrep[1]{%
36    \@oparg{\axp@newtheoremrep{#1}}[]%
37 }

39 \ifthenelse{\equal{\AXP@appendix}{inline}}{
40    \def\axp@newtheoremrep#1[#2]#3{%
41       \expandafter\let\csname #1\endcsname\undefined
42       \expandafter\let\csname c@#1\endcsname\undefined
43       \newtheorem{#1}[#2]{#3}%
44       \NewEnviron{#1rep}[1][]{%
45          \begin{#1}[##1]\BODY\end{#1}%
46       }
47    }
48    \newenvironment{toappendix}{}{}
49    \let\inlineproof\proof
50    \let\endinlineproof\endproof
51    \let\nestedproof\proof
52    \let\endnestedproof\endproof
53    \let\appendixproof\proof
54    \let\endappendixproof\endproof
55    \let\noproofinappendix\relax
56    \let\nosectionappendix\relax
57 }{
58    \newwrite\axp@proofsfile
59    \immediate\openout\axp@proofsfile=\jobname.axp
60    \immediate\write\axp@proofsfile{%
61       \noexpand\makeatletter
62       \noexpand\let\noexpand\proof\noexpand\axpold@proof
63       \noexpand\let\noexpand\endproof\noexpand\endaxpold@proof
64       \noexpand\let\noexpand\section\noexpand\axpold@section
65    }
66    \def\FVB@VerbatimOut{%
67       \@bsphack
68       \begingroup
69          \FV@UseKeyValues
70          \FV@DefineWhiteSpace
71          \def\FV@Space{\space}%
72          \FV@DefineTabOut
73          \def\FV@ProcessLine{\immediate\write\axp@proofsfile}%
74          \let\FV@FontScanPrep\relax
```

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```latex
75      \let\@noligs\relax
76      \FV@Scan}
77   \def\FVE@VerbatimOut{\endgroup\@esphack}
78
79   \let\axpold@proof\proof
80   \let\endaxpold@proof\endproof
81
82   \newtoggle{axp@seenreptheorem}
83
84   \def\noproofinappendix{%
85     \global\togglefalse{axp@seenreptheorem}%
86   }
87
88   \newenvironment{appendixproof}
89     {%
90       \axp@writesection
91       \immediate\write\axp@proofsfile{%
92         \noexpand\begin{axpold@proof}%
93       }%
94       \VerbatimOut
95     }
96     {%
97       \endVerbatimOut
98       \immediate\write\axp@proofsfile{%
99         \noexpand\end{axpold@proof}%
100       }%
101       \noproofinappendix
102     }
103
104   \renewenvironment{proof}
105     {%
106       \iftoggle{axp@seenreptheorem}{%
107         \appendixproof
108       }{%
109         \axpold@proof
110       }%
111     }
112     {%
113       \iftoggle{axp@seenreptheorem}{%
114         \endappendixproof
115       }{%
116         \endaxpold@proof
117       }%
118     }
119
120   \let\inlineproof\axpold@proof
121   \let\endinlineproof\endaxpold@proof
122
123   \let\nestedproof\axpold@proof
124   \let\endnestedproof\endaxpold@proof
```

```latex
125
126    \def\@getcl@ss#1.cls#2\relax{\def\@currentclass{#1}}
127    \def\@getclass{\expandafter\@getcl@ss\@filelist\relax}
128    \@getclass
129
130    \newcommand{\appendixrefname}{References for the Appendix}
131    \newcommand{\appendixbibliographystyle}{alpha}
132    \newcommand{\appendixbibliographyprelim}{%
133      \ifthenelse{\equal{\@currentclass}{lipics}}{%
134        \global\let\oldbiblabel\@biblabel
135        \def\@biblabel{\hspace*{-2em}\small\oldbiblabel}%
136      }{}
137    }
138
139    \ifthenelse{\equal{\AXP@appendix}{append}}{
140      \AtEndDocument{%
141        \clearpage\onecolumn\appendix
142        \appendixbibliographyprelim
143        \begin{bibunit}[\appendixbibliographystyle]%
144        \immediate\closeout\axp@proofsfile\input{\jobname.axp}%
145        \renewcommand{\refname}{\appendixrefname}%
146        \putbib
147        \end{bibunit}%
148      }
149    }{}
150
151    \let\axpold@bibliography\bibliography
152    \renewcommand\bibliography[1]{%
153      \defaultbibliography{#1}%
154      \axpold@bibliography{#1}%
155    }
156
157    \newcounter{axp@rpcounter}
158    \newcounter{axp@seccounter}
159
160    \def\axp@newtheoremrep#1[#2]#3{%
161      \newtheorem*{axp@#1rp}{#3}%
162      \expandafter\let\csname #1\endcsname\undefined
163      \expandafter\let\csname c@#1\endcsname\undefined
164      \newtheorem{#1}[#2]{#3}%
165      \NewEnviron{#1rep}[1][]{%
166        \addtocounter{axp@rpcounter}{1}%
167        \begin{#1}[##1]\label{axp@r\roman{axp@rpcounter}}\BODY\end{#1}%
168        \global\toggletrue{axp@seenreptheorem}%
169        \global\expandafter\let\csname rplet\roman{axp@rpcounter}\endcsname\BODY%
170        \axp@writesection%
171        \immediate\write\axp@proofsfile{%
172          \noexpand\begin{axp@#1rp}[\noexpand\ref{axp@r\roman{axp@rpcounter}}]\@ifnotempty{##1}
173          \noexpand\let\noexpand\label\noexpand\@gobble%
174          \expandafter\noexpand\csname rplet\roman{axp@rpcounter}\endcsname\noexpand\end{axp@#
```

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```latex
175          }
176      }
177  }
178
179  \def\axp@sectitle{}
180
181  \let\axpold@section\section
182  \def\section{\@ifstar\@section\@@section}
183  \def\@section#1{%
184    \global\edef\axp@sectitle{#1}%
185    \axpold@section*{#1}%
186    \addtocounter{axp@seccounter}{1}%
187    \label{axp@s\roman{axp@seccounter}}%
188  }
189  \def\@@section#1{%
190    \global\edef\axp@sectitle{#1}%
191    \axpold@section{#1}%
192    \addtocounter{axp@seccounter}{1}%
193    \label{axp@s\roman{axp@seccounter}}%
194  }
195  \ifdefined\@acmtitlebox
196    \def\section{\@ifstar\@section{\@dblarg{\@@section}}}
197    \def\@@section#1#2{%
198      \global\edef\axp@sectitle{#2}%
199      \axpold@section{#2}%
200      \addtocounter{axp@seccounter}{1}%
201      \label{axp@s\roman{axp@seccounter}}%
202    }
203  \fi
204
205  \newcommand{\nosectionappendix}{
206    \global\def\axp@sectitle{}%
207  }
208
209  \newcommand\axp@writesection{%
210    \ifx\axp@sectitle\empty
211    \else
212      \immediate\write\axp@proofsfile{\noexpand\def\noexpand\tmp{\noexpand\ref{axp@s\roman{a
213      (\axp@sectitle)}}%
214      \nosectionappendix
215    \fi
216  }
217
218  \newenvironment{toappendix}
219    {\axp@writesection\VerbatimOut}
220    {\endVerbatimOut}
221
222  \ifdefined\@acmtitlebox
223    \newtheoremstyle{mystyle}%
224      {3pt}
```

5

```
225        {3pt}
226        {\itshape}
227        {}
228        {\scshape}
229        {.}
230        {.5em}
231        {}
232     \theoremstyle{mystyle}
233
234     \newcommand{\refname}{REFERENCES}
235     \patchcmd{\thebibliography}{References}{\protect\refname}{}{}
236     \patchcmd{\thebibliography}{References}{\protect\refname}{}{}
237
238     \renewcommand{\appendixrefname}{REFERENCES FOR THE APPENDIX}
239   \fi
240 }
241
242 \newenvironment{proofsketch}
243   {\vskip3pt\noindent\emph{Proof sketch.} }
244   {\hfill\qed\vskip3pt}
245
246 \def\thmhead#1#2#3{%
247   \thmname{#1}\thmnumber{\@ifnotempty{#1}{ }\@upn{#2}}%
248   \thmnote{ #3}}
249
250 \makeatother
```

Change History

v1.0.0